

ACIDIC PRECIPITATION IN ONTARIO STUDY

**CUMULATIVE (28 DAY) PRECIPITATION CHEMISTRY LISTINGS
JANUARY 4, 1983 - JANUARY 3, 1984**

**Atmospheric Processes Studies Unit
Air Quality and Meteorology Section
Air Resources Branch
Toronto, Ontario
Canada, M5S 1Z8**

May 1985

**ARB-063-85-AQM
API 015/85**

**A.P.I.O.S. Coordination Office
Ontario Ministry of the Environment
6th Floor, 40 St. Clair Ave. W.,
Toronto, Ontario
Canada, M4V 1P5
Project Coordinator : Dr. T.G. Brydges**

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**TD
195.54
.06
C862
1985
MOE**

TD	Cumulative (28 day)
195.54	precipitation chemistry listings :
.06	January 4, 1983 - January 3,
C862	1984.
1985	77577

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**MINISTRY OF THE ENVIRONMENT
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ACKNOWLEDGEMENTS

This report was prepared by David Chung of the APIOS Atmospheric Deposition and Chemistry Program. However, the data themselves are a product of the combined efforts of many individuals. Precipitation samples were collected by a large number of site operators, whose names cannot be individually mentioned here, under the coordination of the APIOS environmental technicians Steve Elliott (in Southwestern Region), David Allcock (in Southeastern Reigon), Wim Smits (in Northwestern Region), Chris Hutt (in Northeast Region), and J.P. Varto (in Central Region). Sample handling was carried out by Dan Orr and Scott Kennedy, and overall network coordination by Bill Bardswick, of the Air Resources Branch. Chemical Analyses were performed at the Laboratory Services Branch under the coordination of Frank Tomassini and Barry Loescher. All enquiries regarding the reported data should be directed to Walter Chan, Coordinator, Atmospheric Deposition and Chemistry Program, at (416) 965-1634.

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Waterloo	07	22
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PRECIPITATION CHEMISTRY LISTINGS**

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Ramsey	26A	79
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**PART VII NORTHWESTERN REGION CUMULATIVE
PRECIPITATION CHEMISTRY LISTINGS**

<u>Station Name</u>	<u>Map Ref. No.</u>	<u>Page</u>
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Geraldton	30	97
Lac La Croix	33	100
Nakina	30A	103
Pickle Lake	36	106
Quetico Centre	32	109
Winisk	29	112

PART I

INTRODUCTION

INTRODUCTION

The data listed herein are a summary of the results acquired from the APIOS cumulative precipitation sampling network from January 4, 1983 to January 3, 1984. The sampler utilized for collection of wet cumulative deposition is the M.I.C. Type "A" collector (Sangamo). During May to October when precipitation is mainly in the form of rain, the Sangamo collector is equipped with a 34 cm x 61 cm polyethylene bag insert. For snow and snow/rain collection from November to April, deeper collection vessels are utilized (122 cm) with 34 cm x 122 cm polyethylene bag inserts. The deeper collection vessel is utilized to reduce snow blow out. The period of accumulation per sample is 28 days.

All data presented in this report have been screened for validity. Remarks and qualifications have been appended to records, and/or results where necessary. The screening procedure involved checking each record for chemical analysis integrity (e.g. ionic balance, observed vs. theoretical conductance). Gross limits checks were applied to the results. Upper limits were determined as $M + 2S$ where median (M) and scale (S) represent robust estimates of mean and standard deviation respectively. Scale of the distribution was estimated from interquartile distance, i.e. $S=0.74$ (3rd quartile - 1st quartile) based upon logarithmically transformed results. In a situation where the distribution is significantly bounded by reported detection limits, S may be estimated as follows, $S=1.48$ (3rd quartile - 2nd quartile). All lower gross limits were specified as zero. The data were also screened for outliers statistically by applying the Dixon Ratio test to the highest and lowest values observed in each region on a monthly basis. Outliers were determined at the 95% level of confidence. Records and/or results deemed unreliable are flagged but not deleted. Detailed description of the validation procedures as applied to this data set is available from the Ministry upon request.

Station Identification

The station identification is defined by four descriptive fields (e.g., Dorest/Cumulative/Wet #20). The first field refers to the sampling location. The second and third fields describe the sampling interval and the sampling type (e.g., wet or dry) respectively. The last numeric field refers to the index code utilized on the location map. All precipitation chemistry listings are given in alphabetic order by station name within each region.

Cumulative Precipitation Chemistry Listings

Sample type, as coded in the data listings, represents the state of the collected sample at time of removal. The sample date represents the date on which the sample was removed from the sampler. All chemical analyses were done on unfiltered samples. Lab pH entries represent pH measurements obtained at the MQE Laboratory in Toronto. Reported total hydrogen ion concentration (mg l^{-1}) represents a titration of the sample with NaOH to an end point pH of 8.3. For a complete outline of lab analytical methodology please consult the Ontario Ministry of the Environment report "Outlines of Analytical Methods" coordinated by Water Quality Section, Laboratory Services Branch, June 1981.

Of the reported metals, aluminum, copper, iron and zinc were found to display significant adsorptive losses. As a result, a leach solution of 5% HNO₃ (1 litre) is placed in the emptied collection bag for 24 hours. The leach solution is then analysed for the above metals and a final metal concentration is then calculated. In the calculation of final metal concentration, if a detection limit is encountered, a value corresponding to one half the detection limit is utilized.

Co-located with each sampler is a cumulative precipitation gauge which serves as a primary standard of precipitation during the collection period. However, if the cumulative gauge depth is missing or is thought to be inaccurate, then an approximate precipitation depth is determined. The approximation is made by accumulating three surrounding CLIMAT* station daily depth gauge results individually and then interpolating linearly to the APIOS station. Sometimes precipitation gauge results could not be calculated by the above method, in which case the data are missing in the tables to follow.

Calculation of Equivalent Precipitation Depth (mm)

$$\text{Equivalent Precipitation Depth (mm)} = \frac{\text{Volume Collected (ml)} \times 30.8}{1000}$$

Calculation of Observed Sampling Efficiency

$$\% \text{ Efficiency} = \frac{\text{Equivalent Precipitation Depth (mm)} \times 100 \%}{\text{Gauge Depth (mm)}}$$

Field Comment Code Index

- A - Insects in sample
- B - Leaves in sample
- C - Particulates in sample
- D - Fibres in sample
- E - Sample not submitted
- F - Sampler malfunctioned
- G - Sample spilled or leaked
- H - Volume incorrect
- I - Event(s) missed
- J - Wet side open when not precipitating
- K - No precipitation collected
- L - Part of event missed
- M - Dry side open when precipitating
- P - Gauge depth incorrect
- Q - Other

* Environment Canada, Atmospheric Environment Service Meteorological Observations in Eastern Canada, Monthly Record

Office Comment Code Index

C - calculated/observed conductance discrepancy
H - calculated/observed pH discrepancy
J - Δ pH large
M - poor ionic balance
N - abnormal sampler efficiency
T - free hydrogen exceeds total hydrogen
X - sample lost

Analytical Result Remark Code Index

> - actual result greater than value reported
< - actual result less than value reported
<T - actual result less than criterion of detection
<W - no response, minimum possible result reported
A - approximate value
U - unreliable result
L - bag leach result not available
L< - bag leach result not available and precipitation
sample result has been reported as a detection limit
G - exceedance of gross limit checks
D - outlier of Dixon Ratio Test
G - exceedance of gross limit checks and outlier of
Dixon Ratio Test

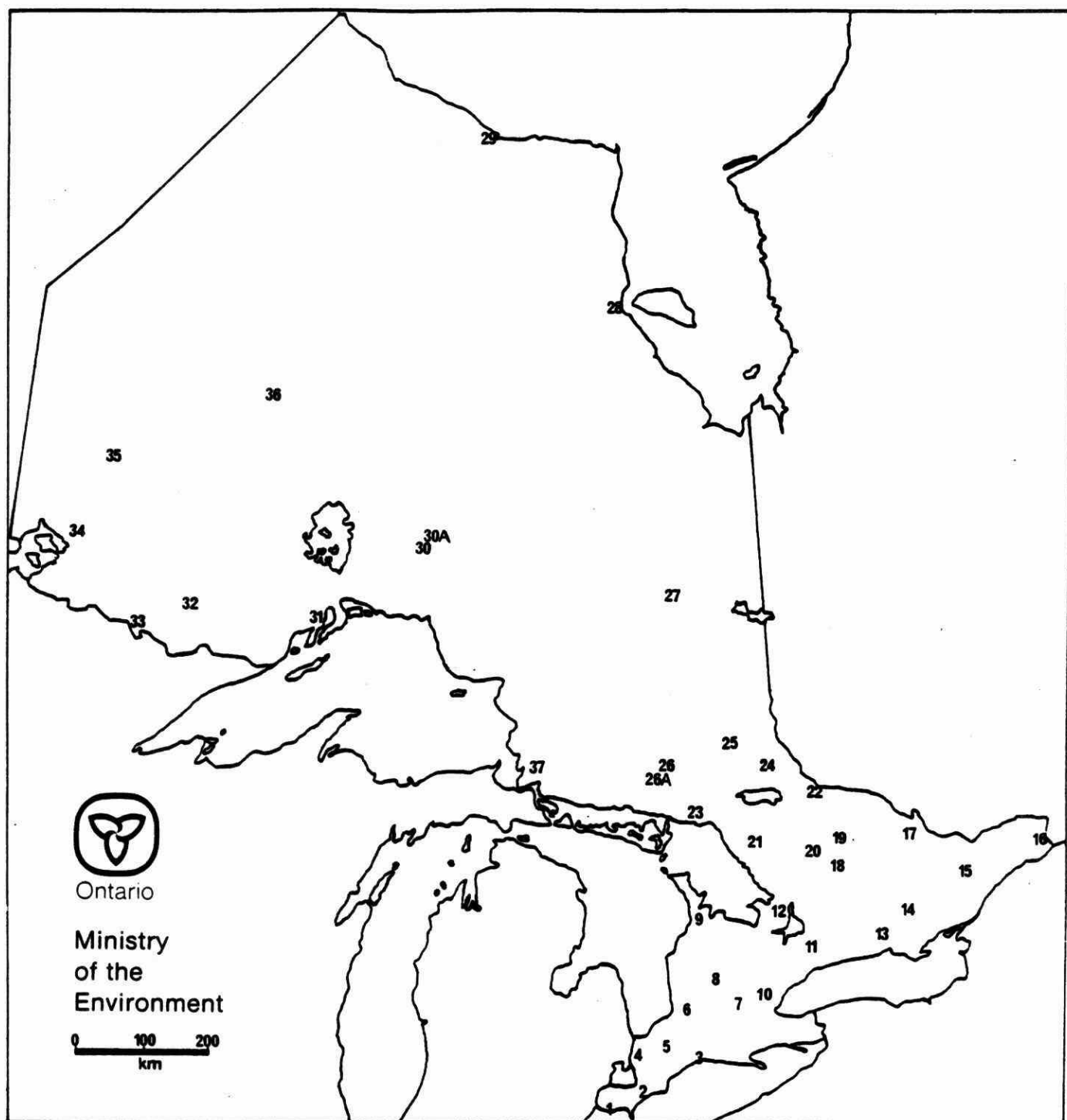
PART II

STATION DESCRIPTION AND LOCATION MAP

APIOS CUMULATIVE WET DEPOSITION NETWORK SITE DESCRIPTIONS

<u>MOE REGION</u>	<u>STATION NAME</u>	<u>ELEVATION</u> (m above MSL)	<u>LATITUDE</u> (North)	<u>LONGITUDE</u> (West)	<u>UTM GRID CO-ORDINANTS</u> (Northing)	<u>UTM GRID CO-ORDINANTS</u> (Easting)
Southwestern	Colchester	183	41°59'15"	82°55'41"	4650000	340300
	Merlin	191	42°14'47"	82°13'30"	4676400	398950
	Pt. Stanley	213	42°40'22"	81°09'55"	4724050	486700
	Wilkesport	183	42°42'11"	82°21'13"	4728350	389150
	Alvinston	221	42°49'36"	81°50'04"	4942000	431550
	Shallow Lake	229	44°34'54"	81°05'24"	4936200	492850
	Palmerston	389	43°48'19"	80°54'12"	4850050	507750
	Huron Park	250	43°17'28"	81°30'03"	4793000	459350
	Waterloo	343	43°28'39"	80°35'09"	4813750	533500
Central	Dorset	320	45°13'26"	78°55'52"	5009650	662400
	Milton	221	43°31'05"	79°55'54"	4818600	586350
	Uxbridge	244	44°12'46"	79°12'38"	4896800	643000
	Wilberforce	396	45°00'54"	78°12'58"	4988150	719400
	Campbellford	175	44°17'28"	77°47'33"	4907600	277150
	Coldwater	280	44°37'31"	79°32'08"	4942200	615900
	Smith's Falls	122	44°56'41"	75°57'48"	4977100	423950
Southeastern	Dalhousie Mills	69	45°19'00"	74°28'13"	5018100	541550
	Golden Lake	160	45°36'48"	77°12'03"	5053200	328400
Northeastern	McKellar	244	45°30'57"	79°55'19"	5040600	583950
	Killarney	183	45°59'26"	81°29'18"	5092900	462200
	Mattawa	198	46°16'45"	78°49'19"	5127150	667800
	Bear Island	305	46°58'22"	80°04'40"	5202400	570350
	Ramsey	427	47°26'33"	82°20'14"	5254900	399200
	Azure Lake	244	47°28'12"	81°52'30"	5257650	434250
	Gowganda	343	47°39'04"	80°46'32"	5277300	516600
	Moonbeam	244	49°19'16"	82°08'46"	5463600	416650
	Turkey Lake	472	47°03'15"	84°24'00"	5214250	696750
	Attawapiskat	9	52°56'00"	82°24'00"	NA	NA
	Whitney	412	45°32'21"	78°15'35"	5045950	713950
Northwestern	Dorion	244	48°50'33"	88°36'45"	5410800	382150
	Nakina	320	50°10'38"	86°42'40"	5558150	520950
	Geraldton	351	49°48'05"	86°46'00"	5516300	516750
	Ear Falls	350	50°38'31"	93°13'13"	5609800	484150
	Pickle Lake	360	51°27'41"	90°12'04"	5704800	694550
	Lac la Croix	368	48°21'14"	92°12'32"	5355900	558400
	Quetico Centre	420	48°44'24"	91°12'08"	5399750	632100
	E.L.A.	123	49°39'22"	93°43'28"	5500950	447350
	Winisk	9	55°12'00"	85°08'00"	NA	NA

LOCATION OF APIOS CUMULATIVE WET DEPOSITION NETWORK SITES:



1. Colchester
2. Merlin
3. Pt. Stanley
4. Wilkesport
5. Alvinston
6. Huron Park
7. Waterloo
8. Palmerston
9. Shallow Lake
10. Milton
11. Uxbridge
12. Coldwater
13. Campbellford

15. Smith's Falls
16. Dalhousie
17. Golden Lake
18. Wilberforce
19. Whitney
20. Dorset
21. Mckellar
22. Mattawa
23. Killarney
24. Bear Island
25. Gowganda
26. Azure Lake (replacing Ramsey, July 1983)
- 26A. Ramsey
27. Moonbeam

28. Attawapiskat
29. Winisk
30. Geraldton (Replacing Nakina, August 1983)
- 30A. Nakina
31. Dorion
32. Quetico Center
33. Lac LaCroix
34. Experimental Lakes Area
35. Ear Falls
36. Pickle Lake
37. Turkey Lake

PART III

SOUTHWESTERN REGION

CUMULATIVE PRECIPITATION CHEMISTRY LISTINGS

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : ALVINSTON/CUMULATIVE PRECIP.

#05

PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-NOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 4,83	830	830	3	37.0	0	19416	2	1	U 74	FJCD
MAR 1,83	FEB 1,83	830	1500	1	26.0	0	19436	2	1	76	ACD
MAR 29,83	MAR 1,83	1500	830	3	42.0	0	19456	2	1	82	AC
APR 26,83	MAR 29,83	830	830	1	135.0	0	19476	2	1	76	CD
MAY 24,83	APR 26,83	830	830	1	143.2	9	19496	2	1	33	BCD N
JUN 21,83	MAY 24,83	830	900	1	55.6	9	19516	2	1	67	C
JUL 19,83	JUN 21,83	900	1130	1	76.2	9	19532	2	1	36	AC N
AUG 16,83	JUL 19,83	1130	1200	1	140.0	0	19542	2	1	89	
SEP 13,83	AUG 16,83	1200	1200	1	36.0	0	19552	2	1	73	
OCT 11,83	SEP 13,83	1200	830	1	87.0	0	19567	2	1	87	HM
NOV 9,83	OCT 11,83	830	1000	1	40.0	0	19573	2	1	81	
DEC 6,83	NOV 9,83	1000	830	3	90.0	0	19584	2	1	U 74	F
JAN 3,84	DEC 6,83	830	830	3	78.0	0	19595	2	1	79	CD

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 4,83	891.0	41.0	4.15	0.1352	4.15	0.81	0.67
MAR 1,83	FEB 1,83	650.0	G 71.0	3.82	G 0.1830	5.45	1.23	0.67
MAR 29,83	MAR 1,83	1130.0	26.0	4.68	0.0546	3.80	0.60	0.91
APR 26,83	MAR 29,83	3353.0	32.5	4.33	0.0768	3.45	0.46	0.41
MAY 24,83	APR 26,83	1550.0	29.7	4.35	0.0742	3.90	0.36	0.54
JUN 21,83	MAY 24,83	1221.0	41.0	4.18	0.1000	4.55	0.61	0.45
JUL 19,83	JUN 21,83	909.0	35.3	4.43	0.0676	5.00	0.63	0.81
AUG 16,83	JUL 19,83	4088.0	38.8	4.29	0.0910	4.60	0.56	0.51
SEP 13,83	AUG 16,83	855.0	49.5	4.16	0.0976	6.55	0.59	0.64
OCT 11,83	SEP 13,83	2481.0	*****	4.46	0.0656	3.15	0.42	0.30
NOV 9,83	OCT 11,83	1061.0	27.0	4.39	0.0686	3.25	0.46	0.47
DEC 6,83	NOV 9,83	2165.0	17.6	4.55	0.0440	1.70	0.28	0.21
JAN 3,84	DEC 6,83	1774.0	24.6	4.34	0.0720	2.20	0.51	*****

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : ALVINSTON/CUMULATIVE PRECIP.

#05

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 4,83	0.47	0.64	0.125	0.045	0.170	0.540	0.016
MAR 1,83	FEB 1,83	0.65	U 3.30	0.155	B 0.400	0.300	0.590	B 0.280
MAR 29,83	MAR 1,83	0.34	1.00	0.140	D 0.250	0.150	0.700	0.091
APR 26,83	MAR 29,83	0.16	0.48	0.065	0.070	0.070	0.372	0.017
MAY 24,83	APR 26,83	0.14	0.56	0.105	0.050	0.070	0.410	0.011
JUN 21,83	MAY 24,83	0.19	0.54	0.080	0.075	0.060	0.450	0.008
JUL 19,83	JUN 21,83	0.41	0.81	0.140	B 0.275	0.240	0.710	0.007
AUG 16,83	JUL 19,83	0.17	0.58	0.090	0.090	0.070	0.530	0.012
SEP 13,83	AUG 16,83	0.26	0.83	0.120	0.050	0.085	0.790	0.011
OCT 11,83	SEP 13,83	0.18	0.26	0.050	0.030	0.020	0.280	< 0.003
NOV 9,83	OCT 11,83	0.20	0.30	0.095	0.040	0.090	0.216	0.005
DEC 6,83	NOV 9,83	0.09	0.18	0.040	< 0.005	0.025	0.108	0.008
JAN 3,84	DEC 6,83	0.22	*****	*****	*****	*****	0.090	*****

REMOVAL DATE	EXPOSURE DATE	MANGANESE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 4,83	0.005	0.004	0.015	0.071	0.014	< 0.002	0.066
MAR 1,83	FEB 1,83	0.004	0.003	0.018	U 0.653	0.009	< 0.002	0.064
MAR 29,83	MAR 1,83	0.008	< 0.001	0.009	0.128	0.004	< 0.002	0.157
APR 26,83	MAR 29,83	0.005	< 0.001	0.006	0.119	0.006	< 0.002	0.154
MAY 24,83	APR 26,83	0.005	< 0.001	0.007	0.062	0.003	< 0.002	0.111
JUN 21,83	MAY 24,83	0.004	0.004	0.016	0.057	0.007	< 0.002	0.047
JUL 19,83	JUN 21,83	0.006	0.004	0.022	0.046	0.006	< 0.002	0.035
AUG 16,83	JUL 19,83	0.005	< 0.001	0.011	0.054	0.010	< 0.002	0.099
SEP 13,83	AUG 16,83	0.004	< 0.001	0.008	0.055	0.006	< 0.002	0.042
OCT 11,83	SEP 13,83	0.004	< 0.001	0.007	0.063	0.006	< 0.002	0.062
NOV 9,83	OCT 11,83	0.003	< 0.001	0.007	0.041	B 0.026	< 0.002	0.028
DEC 6,83	NOV 9,83	0.001	< 0.001	0.005	0.020	0.003	< 0.002	0.033
JAN 3,84	DEC 6,83	0.003	0.001	0.010	0.024	0.006	< 0.002	0.041

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : ALVINSTON/CUMULATIVE PRECIP.

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PAGE : 3

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 4,83	0.005	0.0006	0.0708
MAR 1,83	FEB 1,83	0.007	0.0001	0.1514
MAR 29,83	MAR 1,83	0.006	< 0.0001	0.0209
APR 26,83	MAR 29,83	0.002	0.0001	0.0468
MAY 24,83	APR 26,83	0.003	0.0002	0.0447
JUN 21,83	MAY 24,83	0.008	0.0014	0.0661
JUL 19,83	JUN 21,83	0.005	0.0005	0.0372
AUG 16,83	JUL 19,83	0.001	0.0001	0.0513
SEP 13,83	AUG 16,83	0.002	< 0.0001	0.0692
OCT 11,83	SEP 13,83	0.001	< 0.0001	0.0347
NOV 9,83	OCT 11,83	0.001	0.0002	0.0407
DEC 6,83	NOV 9,83	< 0.001	0.0003	0.0282
JAN 3,84	DEC 6,83	0.001	0.0004	0.0457

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : COLCHESTER/CUMULATIVE PRECIP.

#01

PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-NOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 4,83	800	930	3	18.0	0	19408	2	1	93	D HM
MAR 1,83	FEB 1,83	930	805	3	18.9	9	19428	2	1	88	CD
MAR 29,83	MAR 1,83	810	745	3	46.0	0	19448	2	1	U 80	FJCD
APR 26,83	MAR 29,83	745	750	3	76.0	0	19468	2	1	73	CD
MAY 24,83	APR 26,83	750	800	1	132.0	0	19488	2	1	81	ACD
JUN 21,83	MAY 24,83	800	740	1	36.0	0	19508	2	1	U 80	AFJCD
JUL 19,83	JUN 21,83	740	800	1	78.0	0	19528	2	1	78	CD
AUG 16,83	JUL 19,83	800	800	1	111.0	0	19538	2	1	77	A
SEP 13,83	AUG 16,83	820	748	1	29.0	0	19548	2	1	67	A
OCT 11,83	SEP 13,83	752	810	1	52.0	0	19565	2	1	80	HM
NOV 8,83	OCT 11,83	810	820	1	82.0	0	19568	2	1	85	
DEC 6,83	NOV 8,83	820	850	3	109.0	0	19579	2	1	112	
JAN 3,84	DEC 6,83	850	820	3	65.0	0	19590	2	1	U 71	GC

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 4,83	547.0	35.5	4.29	0.0920	4.75	0.80	0.14
MAR 1,83	FEB 1,83	543.0	G 67.0	3.90	G 0.1676	5.45	1.42	0.78
MAR 29,83	MAR 1,83	1204.0	34.2	4.35	0.0810	3.55	0.68	0.76
APR 26,83	MAR 29,83	1812.0	45.6	4.12	0.1084	4.60	0.64	0.58
MAY 24,83	APR 26,83	3488.0	32.2	4.33	0.0762	4.15	0.43	0.54
JUN 21,83	MAY 24,83	945.0	49.5	4.20	0.1090	6.10	0.75	0.56
JUL 19,83	JUN 21,83	1979.0	36.5	4.27	0.0878	4.35	0.39	0.28
AUG 16,83	JUL 19,83	2804.0	41.7	4.29	0.0944	5.35	0.56	0.59
SEP 13,83	AUG 16,83	640.0	59.0	4.10	0.1206	8.60	0.89	0.94
OCT 11,83	SEP 13,83	1355.0	*****	4.29	0.0906	4.70	0.66	0.54
NOV 8,83	OCT 11,83	2270.0	28.2	4.30	0.0780	3.00	D 0.19	0.19
DEC 6,83	NOV 8,83	3966.0	24.7	4.31	0.0644	2.40	0.37	0.16
JAN 3,84	DEC 6,83	1512.0	26.7	4.34	0.0844	2.35	0.51	0.41

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : COLCHESTER/CUMULATIVE PRECIP.

#01

PAGE : 2

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 4,83	U 1.00	0.41	0.345	0.040	U 0.560	0.420	0.005
MAR 1,83	FEB 1,83	U 0.95	0.69	0.195	0.075	U 0.700	0.660	0.066
MAR 29,83	MAR 1,83	0.47	0.55	0.160	0.045	0.205	0.372	0.007
APR 26,83	MAR 29,83	0.21	0.38	0.115	0.045	0.075	0.302	0.011
MAY 24,83	APR 26,83	0.11	0.60	0.115	0.055	0.080	0.550	0.013
JUN 21,83	MAY 24,83	0.21	1.40	0.130	0.095	0.045	1.170	U 0.057
JUL 19,83	JUN 21,83	0.13	0.54	0.070	0.035	0.045	0.500	0.010
AUG 16,83	JUL 19,83	0.15	0.75	0.120	0.060	0.025	0.630	0.017
SEP 13,83	AUG 16,83	0.23	1.29	0.230	0.080	0.055	1.060	0.030
OCT 11,83	SEP 13,83	0.11	0.49	0.120	0.030	0.025	0.440	< 0.003
NOV 8,83	OCT 11,83	0.20	0.25	0.050	0.030	0.040	0.212	0.005
DEC 6,83	NOV 8,83	0.16	0.24	0.035	< 0.015	0.025	0.186	0.007
JAN 3,84	DEC 6,83	0.32	0.27	0.120	< 0.010	0.130	0.150	0.010

REMOVAL DATE	EXPOSURE DATE	MANGANESE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 4,83	0.012	< 0.001	0.029	0.110	0.014	< 0.002	0.069
MAR 1,83	FEB 1,83	0.008	0.002	0.028	U 0.834	0.016	< 0.002	0.116
MAR 29,83	MAR 1,83	0.010	0.001	0.018	0.163	0.010	< 0.002	0.183
APR 26,83	MAR 29,83	0.006	< 0.001	0.011	0.063	0.006	< 0.002	0.036
MAY 24,83	APR 26,83	0.006	< 0.001	0.006	0.096	0.004	< 0.002	0.104
JUN 21,83	MAY 24,83	0.006	0.005	0.009	0.115	0.008	< 0.002	0.057
JUL 19,83	JUN 21,83	0.002	< 0.001	0.006	0.018	0.005	< 0.002	0.025
AUG 16,83	JUL 19,83	0.005	< 0.001	0.006	0.056	0.009	< 0.002	0.094
SEP 13,83	AUG 16,83	0.005	0.001	0.018	0.072	0.010	< 0.002	0.071
OCT 11,83	SEP 13,83	0.007	< 0.001	0.011	0.173	0.010	< 0.002	0.195
NOV 8,83	OCT 11,83	0.002	< 0.001	0.009	0.015	0.004	< 0.002	0.017
DEC 6,83	NOV 8,83	0.002	< 0.001	0.038	0.021	0.005	< 0.002	0.031
JAN 3,84	DEC 6,83	0.002	0.001	0.013	0.039	0.006	< 0.002	0.043

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : COLCHESTER/CUMULATIVE PRECIP.

#01

PAGE : 3

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 4,83	< 0.003	0.0002	0.0513
MAR 1,83	FEB 1,83	0.003	0.0002	0.1259
MAR 29,83	MAR 1,83	0.002	< 0.0001	0.0447
APR 26,83	MAR 29,83	< 0.002	0.0001	0.0759
MAY 24,83	APR 26,83	0.001	0.0001	0.0468
JUN 21,83	MAY 24,83	< 0.002	0.0002	0.0631
JUL 19,83	JUN 21,83	< 0.002	< 0.0001	0.0537
AUG 16,83	JUL 19,83	< 0.001	0.0001	0.0513
SEP 13,83	AUG 16,83	< 0.003	0.0002	0.0794
OCT 11,83	SEP 13,83	0.001	0.0001	0.0513
NOV 8,83	OCT 11,83	< 0.001	< 0.0001	0.0501
DEC 6,83	NOV 8,83	< 0.001	0.0004	0.0490
JAN 3,84	DEC 6,83	< 0.002	0.0001	0.0457

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : HURON PARK/CUMULATIVE PRECIP.

#06

PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 4,83	900	930	3	30.0	0	19426	2	1	81	CD H
MAR 1,83	FEB 1,83	930	900	3	30.0	0	19446	2	1	66	C
MAR 29,83	MAR 1,83	900	900	3	34.0	0	19466	2	1	69	
APR 26,83	MAR 29,83	900	1100	1	75.0	2	19486	2	1	61	ACD
MAY 24,83	APR 26,83	1100	1030	1	122.3	1	19506	2	1	85	CD
JUN 21,83	MAY 24,83	1030	1000	1	65.5	1	19526	2	1	72	CD
JUL 19,83	JUN 21,83	1000	830	1	30.8	1	19537	2	1	58	
AUG 16,83	JUL 19,83	830	1500	1	130.1	1	19547	2	1	79	
SEP 13,83	AUG 16,83	1500	900	1	37.6	1	19557	2	1	59	AD
OCT 11,83	SEP 13,83	1000	900	1	125.2	1	19566	2	1	61	D
NOV 8,83	OCT 11,83	900	1400	1	38.4	1	19578	2	1	88	D
DEC 6,83	NOV 8,83	1400	930	3	19.0	0	19589	2	1	U 353	P
JAN 3,84	DEC 6,83	930	700	3	52.0	0	19600	2	1	U 0	GC

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 4,83	795.0	24.4	U 6.06	0.0320	4.55	0.87	U 2.70
MAR 1,83	FEB 1,83	651.0	G 61.0	3.93	0.1588	5.20	1.11	0.60
MAR 29,83	MAR 1,83	762.0	25.2	4.90	0.0432	4.20	0.82	1.34
APR 26,83	MAR 29,83	1502.0	33.2	4.31	*****	3.40	0.51	0.51
MAY 24,83	APR 26,83	3393.0	22.0	G 4.61	0.0484	3.40	0.37	0.56
JUN 21,83	MAY 24,83	1536.0	30.8	4.33	0.0774	3.55	0.49	0.38
JUL 19,83	JUN 21,83	584.0	51.0	4.30	0.0908	7.70	0.59	1.27
AUG 16,83	JUL 19,83	3364.0	45.0	4.26	0.1034	5.40	0.64	0.58
SEP 13,83	AUG 16,83	730.0	60.0	4.10	0.1120	8.80	0.78	1.17
OCT 11,83	SEP 13,83	2497.0	*****	G 4.81	0.0414	3.70	0.47	0.86
NOV 8,83	OCT 11,83	1100.0	26.9	4.47	0.0574	4.50	0.49	0.71
DEC 6,83	NOV 8,83	2180.0	18.8	4.68	0.0386	2.60	0.43	0.70
JAN 3,84	DEC 6,83	0.0	*****	*****	*****	*****	*****	*****

100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500 2600 2700 2800 2900 3000 3100 3200 3300 3400 3500 3600 3700 3800 3900 4000 4100 4200 4300 4400 4500 4600 4700 4800 4900 5000 5100 5200 5300 5400 5500 5600 5700 5800 5900 6000 6100 6200 6300 6400 6500 6600 6700 6800 6900 7000 7100 7200 7300 7400 7500 7600 7700 7800 7900 8000 8100 8200 8300 8400 8500 8600 8700 8800 8900 9000 9100 9200 9300 9400 9500 9600 9700 9800 9900 10000

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ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : HURON PARK/CUMULATIVE PRECIP.

#06

PAGE : 3

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 4,83	< 0.002	0.0020	U 0.0009
MAR 1,83	FEB 1,83	0.002	0.0001	0.1175
MAR 29,83	MAR 1,83	0.003	< 0.0001	0.0126
APR 26,83	MAR 29,83	0.002	0.0006	0.0490
MAY 24,83	APR 26,83	0.001	0.0001	G 0.0245
JUN 21,83	MAY 24,83	< 0.002	0.0001	0.0468
JUL 19,83	JUN 21,83	< 0.003	< 0.0001	0.0501
AUG 16,83	JUL 19,83	0.001	0.0001	0.0550
SEP 13,83	AUG 16,83	< 0.002	0.0001	0.0794
OCT 11,83	SEP 13,83	0.001	0.0001	G 0.0155
NOV 8,83	OCT 11,83	< 0.002	< 0.0001	0.0339
DEC 6,83	NOV 8,83	< 0.001	0.0001	0.0209
JAN 3,84	DEC 6,83	*****	*****	*****

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MERLIN/CUMULATIVE PRECIP.

#02

PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 4,83	700	700	3	25.0	0	19410	2	1	80	CD HM
MAR 1,83	FEB 1,83	700	700	3	26.0	0	19430	2	1	78	C
MAR 29,83	MAR 1,83	700	700	3	46.0	0	19450	2	1	U 87	FCD
APR 26,83	MAR 29,83	700	700	1	71.0	0	19470	2	1	81	ACD
MAY 24,83	APR 26,83	700	700	1	104.0	0	19490	2	1	U 63	FHICD
JUN 21,83	MAY 24,83	700	700	1	35.0	0	19510	2	1	79	CD
JUL 19,83	JUN 21,83	700	800	1	101.0	0	19529	2	1	U 69	FJ
AUG 16,83	JUL 19,83	800	800	1	89.0	0	19539	2	1	76	
SEP 13,83	AUG 16,83	800	800	1	35.0	0	19549	2	1	73	
OCT 11,83	SEP 13,83	800	730	1	60.0	0	19564	2	1	77	A H
NOV 8,83	OCT 11,83	730	700	1	50.0	0	19569	2	1	74	
DEC 6,83	NOV 8,83	700	700	3	122.0	0	19580	2	1	89	
JAN 3,84	DEC 6,83	700	700	3	76.0	0	19591	2	1	81	

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 4,83	652.0	31.4	4.73	0.0572	5.60	0.97	U 4.10
MAR 1,83	FEB 1,83	665.0	G 56.0	4.01	0.1274	5.15	1.21	1.03
MAR 29,83	MAR 1,83	1306.0	41.6	4.21	0.0978	4.20	0.76	0.85
APR 26,83	MAR 29,83	1888.0	40.7	4.18	0.0984	4.10	0.61	0.63
MAY 24,83	APR 26,83	2154.0	33.4	4.48	0.0616	5.35	0.56	1.23
JUN 21,83	MAY 24,83	900.0	54.5	4.12	0.1160	6.80	0.95	1.21
JUL 19,83	JUN 21,83	2283.0	27.0	4.51	0.0564	4.20	0.37	0.80
AUG 16,83	JUL 19,83	2207.0	45.0	4.29	0.1010	5.85	0.69	D 0.98
SEP 13,83	AUG 16,83	831.0	44.4	4.28	0.0816	6.35	0.70	1.01
OCT 11,83	SEP 13,83	1501.0	*****	4.48	0.0634	3.85	0.53	0.59
NOV 8,83	OCT 11,83	1209.0	28.4	4.37	0.0714	3.65	0.50	0.62
DEC 6,83	NOV 8,83	3547.0	26.0	4.35	0.0582	2.80	0.48	0.42
JAN 3,84	DEC 6,83	2021.0	24.6	4.44	0.0644	2.55	0.49	0.73

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MERLIN/CUMULATIVE PRECIP.

#02

PAGE : 2

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 4,83	0.67	0.65	U 0.800	0.055	0.320	0.490	0.015
MAR 1,83	FEB 1,83	0.51	0.63	0.205	0.025	0.350	0.590	0.004
MAR 29,83	MAR 1,83	0.46	0.44	0.145	0.040	0.245	0.292	0.008
APR 26,83	MAR 29,83	0.19	0.57	0.090	0.050	0.075	0.262	0.043
MAY 24,83	APR 26,83	0.23	0.84	D 0.240	0.095	0.105	0.620	D 0.045
JUN 21,83	MAY 24,83	0.25	0.81	D 0.225	0.050	0.030	0.670	0.016
JUL 19,83	JUN 21,83	0.17	0.26	0.170	0.045	0.045	0.500	< 0.002
AUG 16,83	JUL 19,83	0.19	0.59	0.150	0.140	D 0.170	0.580	0.005
SEP 13,83	AUG 16,83	0.21	0.86	0.200	0.045	0.040	0.750	0.015
OCT 11,83	SEP 13,83	0.04	0.47	0.120	0.045	0.020	0.380	0.008
NOV 8,83	OCT 11,83	0.21	0.28	0.140	0.035	0.070	0.218	0.006
DEC 6,83	NOV 8,83	0.20	0.34	0.075	0.020	0.035	0.244	0.010
JAN 3,84	DEC 6,83	0.40	0.17	0.145	0.030	0.215	0.060	0.016

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 4,83	0.011	< 0.001	0.017	0.158	0.010	< 0.002	0.114
MAR 1,83	FEB 1,83	0.007	< 0.001	0.017	U 0.762	0.018	< 0.002	0.105
MAR 29,83	MAR 1,83	0.008	< 0.001	0.010	0.110	0.010	< 0.002	0.120
APR 26,83	MAR 29,83	0.007	< 0.001	0.008	0.186	0.006	< 0.002	0.206
MAY 24,83	APR 26,83	0.008	< 0.001	0.009	0.098	0.006	< 0.002	0.102
JUN 21,83	MAY 24,83	0.008	0.010	0.009	0.144	0.009	< 0.002	0.105
JUL 19,83	JUN 21,83	0.005	< 0.001	0.006	0.036	0.005	< 0.002	0.046
AUG 16,83	JUL 19,83	0.007	< 0.001	0.005	0.085	0.007	< 0.002	D 0.134
SEP 13,83	AUG 16,83	0.006	< 0.001	0.007	0.090	0.007	< 0.002	0.078
OCT 11,83	SEP 13,83	0.005	< 0.001	0.007	0.071	0.007	< 0.002	0.061
NOV 8,83	OCT 11,83	0.004	< 0.001	0.008	0.056	0.005	< 0.002	0.059
DEC 6,83	NOV 8,83	0.002	0.003	0.007	0.037	0.004	< 0.002	0.049
JAN 3,84	DEC 6,83	0.005	0.001	0.039	D 0.155	0.004	< 0.002	D 0.128

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MERLIN/CUMULATIVE PRECIP.

#02

PAGE : 3

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 4,83	0.002	0.0002	0.0186
MAR 1,83	FEB 1,83	0.003	0.0001	0.0977
MAR 29,83	MAR 1,83	0.001	0.0003	0.0617
APR 26,83	MAR 29,83	0.001	< 0.0001	0.0661
MAY 24,83	APR 26,83	0.001	0.0003	0.0331
JUN 21,83	MAY 24,83	< 0.002	0.0002	0.0759
JUL 19,83	JUN 21,83	0.001	< 0.0001	0.0309
AUG 16,83	JUL 19,83	0.001	0.0001	0.0513
SEP 13,83	AUG 16,83	< 0.002	0.0001	0.0525
OCT 11,83	SEP 13,83	0.002	0.0001	0.0331
NOV 8,83	OCT 11,83	< 0.002	0.0004	0.0427
DEC 6,83	NOV 8,83	< 0.001	< 0.0001	0.0447
JAN 3,84	DEC 6,83	< 0.001	0.0001	0.0363

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PALMERSTON/CUMULATIVE PRECIP.

#08

PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 4,83	1300	1300	3	29.0	0	19420	2	1	74	CD
MAR 1,83	FEB 1,83	1300	1300	3	27.0	0	19440	2	1	82	CD H
MAR 29,83	MAR 1,83	1300	1300	3	43.0	0	19460	2	1	78	ACD
APR 26,83	MAR 29,83	1300	1300	1	43.0	0	19480	2	1	87	ACD
MAY 30,83	APR 26,83	1300	1300	1	150.0	0	19500	2	1	82	ACD
JUN 21,83	MAY 30,83	1300	1300	1	20.0	0	19520	2	1	80	D
JUL 19,83	JUN 21,83	1300	1500	1	28.0	0	19534	2	1	96	CD
AUG 18,83	JUL 19,83	1500	1100	1	67.0	0	19544	2	1	79	
SEP 13,83	AUG 18,83	1300	1300	1	75.0	0	19554	2	1	68	
OCT 11,83	SEP 13,83	1300	1300	1	120.0	0	19560	2	1	44	N
NOV 8,83	OCT 11,83	1300	1400	1	70.0	0	19575	2	1	68	
DEC 6,83	NOV 8,83	1400	1300	3	25.0	0	19586	2	1	U 264	P
JAN 4,84	DEC 6,83	1300	1300	2	61.0	0	19597	2	1	65	CD

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 4,83	700.0	23.9	4.61	0.0688	3.25	0.76	0.86
MAR 1,83	FEB 1,83	723.0	D 36.6	4.27	0.0764	3.80	0.92	0.87
MAR 29,83	MAR 1,83	1090.0	21.5	U 6.77	0.0248	3.50	0.79	1.13
APR 26,83	MAR 29,83	1227.0	23.6	B 4.96	0.0412	3.75	0.49	0.61
MAY 30,83	APR 26,83	4001.0	23.8	G 4.61	0.0514	3.55	0.44	0.50
JUN 21,83	MAY 30,83	521.0	29.3	G 4.60	0.0588	4.95	0.66	1.00
JUL 19,83	JUN 21,83	877.0	46.0	4.29	0.0894	6.85	0.75	0.88
AUG 18,83	JUL 19,83	1736.0	*****	G 4.76	0.0462	3.00	0.33	*****
SEP 13,83	AUG 18,83	1669.0	30.5	4.44	0.0592	4.05	0.49	0.51
OCT 11,83	SEP 13,83	1719.0	*****	G 4.65	0.0494	3.25	0.42	0.48
NOV 8,83	OCT 11,83	1548.0	24.0	4.49	0.0578	3.10	0.47	0.27
DEC 6,83	NOV 8,83	2143.0	18.6	4.56	0.0440	1.85	0.43	0.20
JAN 4,84	DEC 6,83	1300.0	19.3	D 4.64	0.0418	1.75	0.48	0.33

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PALMERSTON/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 4,83	0.32	0.65	0.310	0.035	0.135	0.580	0.011
MAR 1,83	FEB 1,83	0.35	0.72	0.310	0.025	0.190	0.690	0.016
MAR 29,83	MAR 1,83	0.27	1.37	0.315	0.090	0.140	1.070	0.065
APR 26,83	MAR 29,83	0.17	D 1.05	0.185	D 0.115	0.085	D 0.790	0.059
MAY 30,83	APR 26,83	0.12	0.78	0.125	0.040	0.050	0.680	0.030
JUN 21,83	MAY 30,83	0.13	0.89	0.180	0.030	0.020	0.830	0.008
JUL 19,83	JUN 21,83	0.26	1.07	0.200	0.150	0.215	1.120	< 0.004
AUG 18,83	JUL 19,83	0.07	0.81	*****	*****	*****	0.460	D 0.040
SEP 13,83	AUG 18,83	0.12	0.67	0.110	0.035	0.075	0.650	0.011
OCT 11,83	SEP 13,83	<W 0.01	0.55	0.090	0.040	0.020	0.450	0.006
NOV 8,83	OCT 11,83	0.12	0.53	0.090	0.030	0.050	0.490	0.010
DEC 6,83	NOV 8,83	0.17	0.34	0.065	< 0.010	0.055	0.300	0.009
JAN 4,84	DEC 6,83	0.32	0.42	0.095	0.045	0.185	0.250	0.015

REMOVAL DATE	EXPOSURE DATE	MANGANESE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 4,83	0.006	0.002	0.014	0.094	0.013	< 0.002	0.084
MAR 1,83	FEB 1,83	0.004	0.001	0.012	0.106	0.009	< 0.002	0.057
MAR 29,83	MAR 1,83	0.010	< 0.001	0.016	0.185	0.004	< 0.002	0.199
APR 26,83	MAR 29,83	0.004	< 0.001	0.007	0.046	0.005	< 0.002	0.059
MAY 30,83	APR 26,83	0.005	< 0.001	0.007	0.027	0.003	< 0.002	0.034
JUN 21,83	MAY 30,83	*****	*****	*****	*****	*****	*****	*****
JUL 19,83	JUN 21,83	0.007	< 0.001	0.008	0.064	0.007	< 0.002	D 0.086
AUG 18,83	JUL 19,83	*****	*****	*****	*****	*****	*****	*****
SEP 13,83	AUG 18,83	0.003	< 0.001	0.004	0.034	0.002	< 0.002	0.037
OCT 11,83	SEP 13,83	0.005	< 0.001	0.007	0.088	0.004	< 0.002	0.084
NOV 8,83	OCT 11,83	0.002	< 0.001	0.006	0.025	0.006	< 0.002	0.028
DEC 6,83	NOV 8,83	0.002	< 0.001	0.011	0.025	0.005	< 0.002	0.032
JAN 4,84	DEC 6,83	0.003	0.001	0.020	0.048	0.005	< 0.002	0.057

ONTARIO MINISTRY OF THE ENVIRONMENT
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 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PALMERSTON/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 4,83	< 0.002	0.0002	0.0245
MAR 1,83	FEB 1,83	0.003	0.0002	0.0537
MAR 29,83	MAR 1,83	0.002	0.0003	U 0.0002
APR 26,83	MAR 29,83	< 0.002	0.0001	B 0.0110
MAY 30,83	APR 26,83	0.001	0.0002	G 0.0245
JUN 21,83	MAY 30,83	*****	*****	G 0.0251
JUL 19,83	JUN 21,83	< 0.002	< 0.0001	0.0513
AUG 18,83	JUL 19,83	*****	*****	G 0.0174
SEP 13,83	AUG 18,83	0.001	< 0.0001	0.0363
OCT 11,83	SEP 13,83	< 0.002	< 0.0001	G 0.0224
NOV 8,83	OCT 11,83	0.001	< 0.0001	0.0324
DEC 6,83	NOV 8,83	0.002	0.0006	0.0275
JAN 4,84	DEC 6,83	< 0.002	0.0008	D 0.0229

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PORT STANLEY/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-HOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 4,83	1100	900	3	27.0	0	19412	2	1	87	AD
MAR 1,83	FEB 1,83	900	900	1	27.0	0	19432	2	1	77	ACD
MAR 29,83	MAR 1,83	900	1030	3	38.0	0	19452	2	1	U 77	FJAD
APR 26,83	MAR 29,83	1030	900	3	75.0	0	19472	2	1	86	CD
MAY 24,83	APR 26,83	900	900	1	132.8	9	19492	2	1	67	ACD
JUN 21,83	MAY 24,83	900	900	1	43.0	0	19512	2	1	78	ACD
JUL 19,83	JUN 21,83	900	1400	1	59.0	0	19530	2	1	81	CD
AUG 16,83	JUL 19,83	1400	900	1	213.0	0	19540	2	1	84	AD HM
SEP 13,83	AUG 16,83	900	900	1	29.0	0	19550	2	1	86	D
OCT 11,83	SEP 13,83	900	900	1	58.0	0	19563	2	1	U 42	G
NOV 8,83	OCT 11,83	900	900	1	64.0	0	19570	2	1	80	CD HM
DEC 6,83	NOV 8,83	900	930	3	88.0	0	19581	2	1	U 54	FIG
JAN 3,84	DEC 6,83	930	1330	2	90.0	0	19592	2	1	U 78	FI

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 4,83	767.0	48.0	4.07	0.1286	5.50	1.11	1.20
MAR 1,83	FEB 1,83	681.0	G 65.0	3.92	0.1538	6.05	1.22	0.99
MAR 29,83	MAR 1,83	962.0	34.4	4.49	0.0668	4.10	0.72	0.83
APR 26,83	MAR 29,83	2113.0	41.9	4.16	0.1044	3.80	0.62	0.48
MAY 24,83	APR 26,83	2907.0	31.0	4.36	0.0742	4.05	0.43	0.64
JUN 21,83	MAY 24,83	1093.0	55.0	4.03	0.1318	5.90	0.72	0.45
JUL 19,83	JUN 21,83	1556.0	52.0	4.10	0.1244	6.15	0.61	0.43
AUG 16,83	JUL 19,83	5854.0	47.8	4.21	0.1156	5.20	0.56	0.35
SEP 13,83	AUG 16,83	817.0	52.0	4.10	0.1142	6.70	0.68	0.61
OCT 11,83	SEP 13,83	809.0	*****	4.20	0.0882	4.80	0.68	0.71
NOV 8,83	OCT 11,83	1669.0	22.3	U 7.34	0.0194	3.40	0.49	0.99
DEC 6,83	NOV 8,83	1558.0	11.0	4.92	D 0.0280	1.10	0.19	0.23
JAN 3,84	DEC 6,83	2302.0	10.5	U 6.80	0.0224	2.65	U 0.01	1.19

ONTARIO MINISTRY OF THE ENVIRONMENT
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APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PORT STANLEY/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 4,83	0.56	0.80	0.235	0.055	0.265	0.700	0.021
MAR 1,83	FEB 1,83	0.43	0.76	0.200	D 0.100	0.240	0.600	0.019
MAR 29,83	MAR 1,83	0.44	1.07	0.165	0.160	0.270	0.626	0.080
APR 26,83	MAR 29,83	0.21	0.34	0.065	0.065	0.065	0.244	0.012
MAY 24,83	APR 26,83	0.17	0.57	0.110	0.050	0.090	0.460	0.022
JUN 21,83	MAY 24,83	0.17	0.69	0.085	0.060	0.030	0.590	0.012
JUL 19,83	JUN 21,83	0.14	0.43	0.060	0.030	0.030	0.700	< 0.002
AUG 16,83	JUL 19,83	0.16	0.58	0.065	0.045	0.020	0.530	0.011
SEP 13,83	AUG 16,83	0.19	0.81	0.100	0.045	0.030	0.760	0.011
OCT 11,83	SEP 13,83	0.05	0.54	0.150	0.030	0.015	0.420	0.004
NOV 8,83	OCT 11,83	G 0.52	1.68	0.225	0.225	0.105	0.860	0.090
DEC 6,83	NOV 8,83	0.15	0.19	0.045	< 0.015	0.030	0.096	0.011
JAN 3,84	DEC 6,83	0.43	0.35	0.250	0.055	0.240	<W 0.002	0.106

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 4,83	0.013	< 0.001	0.021	0.125	0.019	< 0.002	0.118
MAR 1,83	FEB 1,83	0.008	< 0.001	0.014	0.138	0.014	< 0.002	D 0.097
MAR 29,83	MAR 1,83	0.007	< 0.001	0.011	0.144	0.005	< 0.002	0.160
APR 26,83	MAR 29,83	0.007	< 0.001	0.005	0.076	0.007	< 0.002	0.105
MAY 24,83	APR 26,83	0.006	< 0.001	0.004	0.074	0.004	< 0.002	0.093
JUN 21,83	MAY 24,83	0.004	0.002	0.006	0.044	0.008	< 0.002	0.051
JUL 19,83	JUN 21,83	0.004	< 0.001	0.005	0.038	0.006	< 0.002	0.049
AUG 16,83	JUL 19,83	0.004	< 0.001	0.005	0.046	0.007	< 0.002	0.071
SEP 13,83	AUG 16,83	0.005	< 0.001	0.011	0.055	0.015	< 0.002	0.055
OCT 11,83	SEP 13,83	0.006	< 0.001	0.011	D 0.109	0.008	< 0.002	0.104
NOV 8,83	OCT 11,83	0.005	< 0.001	0.008	0.047	0.004	< 0.002	0.033
DEC 6,83	NOV 8,83	0.002	0.002	0.007	0.049	0.005	< 0.002	0.046
JAN 3,84	DEC 6,83	U 0.027	U 0.028	0.009	U 0.455	0.005	< 0.002	U 0.460

ONTARIO MINISTRY OF THE ENVIRONMENT
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APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PORT STANLEY/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 4,83	0.002	0.0002	0.0851
MAR 1,83	FEB 1,83	0.002	0.0003	0.1202
MAR 29,83	MAR 1,83	0.002	< 0.0001	0.0324
APR 26,83	MAR 29,83	< 0.001	< 0.0001	0.0692
MAY 24,83	APR 26,83	0.001	0.0002	0.0437
JUN 21,83	MAY 24,83	< 0.002	0.0001	0.0933
JUL 19,83	JUN 21,83	0.001	< 0.0001	0.0794
AUG 16,83	JUL 19,83	0.001	0.0001	0.0617
SEP 13,83	AUG 16,83	< 0.002	< 0.0001	0.0794
OCT 11,83	SEP 13,83	0.002	< 0.0001	0.0631
NOV 8,83	OCT 11,83	0.001	< 0.0001	U 0.0000
DEC 6,83	NOV 8,83	< 0.002	0.0003	0.0120
JAN 3,84	DEC 6,83	0.001	0.0001	U 0.0002

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : SHALLOW LAKE/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-HOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
JAN 31,83	JAN 4,83	830	1545	3	73.0	0	19418	2	1	68	
MAR 1,83	JAN 31,83	1545	900	3	36.3	9	19438	2	1	100	C
MAR 29,83	MAR 1,83	900	845	3	79.0	0	19458	2	1	58	ACD
MAY 1,83	MAR 29,83	845	730	1	86.0	0	19478	2	1	75	ACDB
MAY 24,83	MAY 1,83	730	900	1	117.8	9	19498	2	1	U 79	FHJCD
JUN 21,83	MAY 24,83	900	845	1	59.0	0	19518	2	1	82	CD
JUL 19,83	JUN 21,83	845	900	1	50.0	0	19533	2	1	72	CD
AUG 16,83	JUL 19,83	900	745	1	57.0	0	19543	2	1	73	
SEP 13,83	AUG 16,83	900	900	1	64.0	0	19553	2	1	78	C
OCT 11,83	SEP 13,83	900	900	1	149.0	0	19561	2	1	102	
NOV 8,83	OCT 11,83	900	845	1	72.0	0	19574	2	1	80	
DEC 6,83	NOV 8,83	845	915	3	23.0	0	19585	2	1	U 240	P
JAN 3,84	DEC 6,83	915	830	2	115.0	0	19596	2	1	U 50	FI

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
JAN 31,83	JAN 4,83	1624.0	37.0	4.12	0.1152	2.80	0.78	0.20
MAR 1,83	JAN 31,83	1179.0	G 67.0	3.84	G 0.1696	4.85	1.22	0.27
MAR 29,83	MAR 1,83	1513.0	32.5	4.35	0.0794	3.25	0.75	0.40
MAY 1,83	MAR 29,83	2113.0	33.6	4.32	B 0.2040	3.55	0.39	0.28
MAY 24,83	MAY 1,83	3025.0	30.2	4.41	0.0648	4.00	0.54	0.71
JUN 21,83	MAY 24,83	1585.0	49.2	4.12	0.1128	5.50	0.87	0.57
JUL 19,83	JUN 21,83	1170.0	55.0	4.10	0.1240	6.20	0.70	0.45
AUG 16,83	JUL 19,83	1360.0	47.5	4.23	0.1098	5.45	0.70	0.55
SEP 13,83	AUG 16,83	1638.0	20.5	G 4.59	0.0466	2.20	0.30	0.28
OCT 11,83	SEP 13,83	4939.0	*****	G 4.72	0.0412	2.15	0.28	0.28
NOV 8,83	OCT 11,83	1878.0	30.2	4.31	0.0826	3.25	0.59	0.21
DEC 6,83	NOV 8,83	1794.0	25.9	4.30	0.0650	1.95	0.59	0.13
JAN 3,84	DEC 6,83	1904.0	20.7	4.40	0.0618	1.40	0.45	0.11

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : SHALLOW LAKE/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
JAN 31,83	JAN 4,83	0.17	0.48	0.055	0.025	0.060	0.460	0.013
MAR 1,83	JAN 31,83	0.30	0.84	0.050	0.025	0.110	0.770	0.009
MAR 29,83	MAR 1,83	0.20	0.85	0.040	0.075	0.090	0.676	0.050
MAY 1,83	MAR 29,83	0.11	0.54	0.045	0.060	0.045	0.430	0.024
MAY 24,83	MAY 1,83	0.13	0.65	0.130	0.040	0.055	0.590	0.016
JUN 21,83	MAY 24,83	0.14	0.86	0.125	0.045	0.015	0.800	0.014
JUL 19,83	JUN 21,83	0.22	0.73	0.105	0.065	0.070	0.720	0.008
AUG 16,83	JUL 19,83	0.15	0.70	0.125	0.045	0.030	0.630	0.012
SEP 13,83	AUG 16,83	0.08	0.38	0.040	0.030	0.050	0.320	0.012
OCT 11,83	SEP 13,83	<W 0.01	0.33	0.055	0.020	0.015	0.248	0.005
NOV 8,83	OCT 11,83	0.12	0.57	0.055	0.030	0.045	0.510	0.007
DEC 6,83	NOV 8,83	0.17	0.34	0.025	< 0.005	0.040	0.290	0.010
JAN 3,84	DEC 6,83	0.12	0.22	0.025	< 0.005	0.080	0.160	< 0.004

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
JAN 31,83	JAN 4,83	0.002	< 0.001	0.013	0.022	0.009	< 0.002	0.024
MAR 1,83	JAN 31,83	0.002	0.001	0.014	0.035	0.014	< 0.002	0.033
MAR 29,83	MAR 1,83	0.004	< 0.001	0.007	0.043	0.005	< 0.002	0.079
MAY 1,83	MAR 29,83	0.002	< 0.001	0.003	0.034	0.005	< 0.002	0.073
MAY 24,83	MAY 1,83	0.008	< 0.001	0.006	0.080	0.008	< 0.002	0.064
JUN 21,83	MAY 24,83	0.006	0.002	0.007	0.064	0.010	< 0.002	0.056
JUL 19,83	JUN 21,83	0.005	< 0.001	0.008	0.032	0.006	< 0.002	0.044
AUG 16,83	JUL 19,83	0.004	< 0.001	0.006	0.067	0.008	< 0.002	0.095
SEP 13,83	AUG 16,83	0.002	< 0.001	0.003	0.024	0.002	< 0.002	0.027
OCT 11,83	SEP 13,83	0.003	< 0.001	0.003	0.055	0.003	< 0.002	0.054
NOV 8,83	OCT 11,83	0.002	< 0.001	0.007	0.018	0.005	< 0.002	0.025
DEC 6,83	NOV 8,83	0.001	< 0.001	0.007	0.017	0.007	< 0.002	0.023
JAN 3,84	DEC 6,83	< 0.001	< 0.001	0.004	0.014	0.004	< 0.002	0.016

ONTARIO MINISTRY OF THE ENVIRONMENT
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APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : SHALLOW LAKE/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
JAN 31,83	JAN 4,83	0.001	< 0.0001	0.0759
MAR 1,83	JAN 31,83	0.006	0.0004	0.1445
MAR 29,83	MAR 1,83	< 0.002	< 0.0001	0.0447
MAY 1,83	MAR 29,83	< 0.001	< 0.0001	0.0479
MAY 24,83	MAY 1,83	0.002	0.0003	0.0389
JUN 21,83	MAY 24,83	< 0.002	< 0.0001	0.0759
JUL 19,83	JUN 21,83	0.001	< 0.0001	0.0794
AUG 16,83	JUL 19,83	0.001	0.0001	0.0589
SEP 13,83	AUG 16,83	< 0.002	< 0.0001	G 0.0257
OCT 11,83	SEP 13,83	< 0.001	< 0.0001	G 0.0191
NOV 8,83	OCT 11,83	0.001	< 0.0001	0.0490
DEC 6,83	NOV 8,83	< 0.002	0.0001	0.0501
JAN 3,84	DEC 6,83	0.001	0.0001	0.0398

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WATERLOO/CUMULATIVE PRECIP.

#07

PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 4,83	820	820	3	46.0	0	19422	2	1	68	
MAR 1,83	FEB 1,83	820	815	3	44.0	0	19442	2	1	75	CD
MAR 29,83	MAR 1,83	815	820	3	52.0	0	19462	2	1	61	AC H
APR 26,83	MAR 29,83	820	815	1	67.0	0	19482	2	1	78	ACD
MAY 24,83	APR 26,83	815	830	1	142.9	9	19502	2	1	U 51	FLHCD
JUN 21,83	MAY 24,83	830	820	1	58.0	0	19522	2	1	U 38	FJABC
JUL 19,83	JUN 21,83	820	820	1	55.0	0	19535	2	1	79	CD
AUG 16,83	JUL 19,83	820	830	1	133.0	0	19545	2	1	80	
SEP 13,83	AUG 16,83	830	900	1	38.0	0	19555	2	1	83	
OCT 11,83	SEP 13,83	900	830	1	95.0	0	19558	2	1	91	HM
NOV 8,83	OCT 11,83	830	820	3	72.0	0	19576	2	1	89	AD
DEC 6,83	NOV 8,83	820	900	3	30.0	0	19587	2	1	300	N
JAN 3,84	DEC 6,83	900	830	3	74.0	0	19598	2	1	60	C

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 4,83	1027.0	39.5	4.12	0.1210	3.55	0.87	0.42
MAR 1,83	FEB 1,83	1085.0	44.0	4.07	0.1180	3.45	0.80	0.45
MAR 29,83	MAR 1,83	1035.0	22.9	U 6.85	0.0304	3.65	0.69	0.81
APR 26,83	MAR 29,83	1697.0	23.8	U 7.09	0.0336	3.85	0.50	0.43
MAY 24,83	APR 26,83	2395.0	29.5	4.42	0.0642	4.00	0.50	0.61
JUN 21,83	MAY 24,83	726.0	*****	U 8.23	0.0322	*****	*****	*****
JUL 19,83	JUN 21,83	1419.0	25.8	4.51	0.0598	D 3.40	0.31	0.34
AUG 16,83	JUL 19,83	3493.0	39.0	4.30	0.0938	4.30	0.52	0.41
SEP 13,83	AUG 16,83	1030.0	35.6	4.30	0.0766	4.40	0.51	0.51
OCT 11,83	SEP 13,83	2812.0	*****	4.57	D 0.0584	2.95	0.37	0.32
NOV 8,83	OCT 11,83	2095.0	24.5	4.42	0.0630	2.90	0.44	0.21
DEC 6,83	NOV 8,83	2929.0	19.0	4.51	0.0498	1.90	0.34	0.24
JAN 3,84	DEC 6,83	1445.0	19.4	4.51	0.1314	2.00	0.42	0.22

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WATERLOO/CUMULATIVE PRECIP.

#07

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 4,83	0.36	0.73	0.115	0.030	0.140	0.690	0.011
MAR 1,83	FEB 1,83	0.33	0.49	0.110	0.015	0.145	0.450	0.005
MAR 29,83	MAR 1,83	0.39	2.10	0.180	0.225	0.180	1.140	0.138
APR 26,83	MAR 29,83	0.17	2.85	0.195	U 0.465	0.085	G 1.910	U 0.250
MAY 24,83	APR 26,83	0.16	0.72	0.135	0.040	0.085	0.610	0.019
JUN 21,83	MAY 24,83	*****	U 21.00	*****	*****	*****	*****	U 4.100
JUL 19,83	JUN 21,83	0.12	0.49	0.060	0.035	0.040	0.520	0.005
AUG 16,83	JUL 19,83	0.15	0.54	0.080	0.055	0.040	0.450	0.009
SEP 13,83	AUG 16,83	0.17	0.67	0.100	0.045	0.060	0.560	0.012
OCT 11,83	SEP 13,83	<W 0.01	0.39	0.060	0.020	0.020	0.308	< 0.003
NOV 8,83	OCT 11,83	0.20	0.64	0.065	0.085	0.090	0.420	0.025
DEC 6,83	NOV 8,83	0.18	0.27	0.060	< 0.010	0.055	0.140	0.013
JAN 3,84	DEC 6,83	0.28	1.01	0.110	0.210	0.135	0.310	0.134

REMOVAL DATE	EXPOSURE DATE	MANGANESE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 4,83	0.004	< 0.001	0.011	0.052	0.017	< 0.002	0.063
MAR 1,83	FEB 1,83	0.004	< 0.001	0.012	0.108	0.016	< 0.002	0.046
MAR 29,83	MAR 1,83	0.008	< 0.001	0.008	0.090	0.007	< 0.002	0.100
APR 26,83	MAR 29,83	0.005	< 0.001	0.008	0.065	0.007	< 0.002	0.081
MAY 24,83	APR 26,83	0.006	< 0.001	0.005	0.049	0.005	< 0.002	0.040
JUN 21,83	MAY 24,83	*****	*****	*****	*****	*****	*****	*****
JUL 19,83	JUN 21,83	0.003	< 0.001	0.004	0.023	0.005	< 0.002	0.023
AUG 16,83	JUL 19,83	0.004	< 0.001	0.003	0.046	0.006	< 0.002	0.100
SEP 13,83	AUG 16,83	0.004	0.003	0.007	0.066	0.004	< 0.002	0.047
OCT 11,83	SEP 13,83	0.002	< 0.001	0.004	0.033	0.004	< 0.002	0.034
NOV 8,83	OCT 11,83	0.002	< 0.001	0.007	0.032	0.009	< 0.002	0.022
DEC 6,83	NOV 8,83	0.006	< 0.001	0.012	0.072	0.007	< 0.002	0.067
JAN 3,84	DEC 6,83	0.003	0.001	0.009	0.027	0.007	< 0.002	0.017

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WATERLOO/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 4,83	< 0.002	0.0001	0.0759
MAR 1,83	FEB 1,83	< 0.002	< 0.0001	0.0851
MAR 29,83	MAR 1,83	< 0.002	< 0.0001	U 0.0001
APR 26,83	MAR 29,83	0.001	0.0001	U 0.0001
MAY 24,83	APR 26,83	0.002	0.0001	0.0380
JUN 21,83	MAY 24,83	*****	*****	U 0.0000
JUL 19,83	JUN 21,83	U 0.012	< 0.0001	0.0309
AUG 16,83	JUL 19,83	0.001	< 0.0001	0.0501
SEP 13,83	AUG 16,83	0.001	< 0.0001	0.0501
OCT 11,83	SEP 13,83	0.001	< 0.0001	0.0269
NOV 8,83	OCT 11,83	0.001	< 0.0001	0.0380
DEC 6,83	NOV 8,83	0.002	0.0001	0.0309
JAN 3,84	DEC 6,83	0.001	0.0002	0.0309

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WILKESPORT/CUMULATIVE PRECIP.

#04

PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 4,83	1500	1600	3	32.0	0	19414	2	1	87	CD
MAR 1,83	FEB 1,83	1600	1400	1	20.0	0	19434	2	1	52	C
MAR 29,83	MAR 1,83	1400	1300	1	38.0	0	19454	2	1	67	CD
APR 26,83	MAR 29,83	1300	1430	1	68.7	9	19474	2	1	68	CD
MAY 24,83	APR 26,83	1430	1200	1	134.6	9	19494	2	1	54	ACD
JUN 21,83	MAY 24,83	1200	900	1	47.9	9	19514	2	1	U 52	ACFI
JUL 19,83	JUN 21,83	900	900	1	42.0	0	19531	2	1	69	AC
AUG 16,83	JUL 19,83	1400	1235	1	138.0	0	19541	2	1	U 0	FI
SEP 13,83	AUG 16,83	1400	1000	1	16.0	0	19551	2	1	76	
OCT 11,83	SEP 13,83	1300	1450	1	94.0	0	19562	2	1	76	
NOV 8,83	OCT 11,83	1450	1545	1	49.0	0	19572	2	1	75	
DEC 6,83	NOV 8,83	1545	1300	3	106.7	9	19583	2	1	U 76	G
JAN 3,84	DEC 6,83	1300	1300	3	62.4	9	19594	2	1	50	CD

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 4,83	908.0	41.5	4.16	0.1166	5.30	0.89	1.20
MAR 1,83	FEB 1,83	344.0	*****	3.73	G 0.2360	B 8.20	G 1.88	1.45
MAR 29,83	MAR 1,83	837.0	33.4	4.44	0.0732	4.65	0.75	1.27
APR 26,83	MAR 29,83	1534.0	41.9	4.19	0.0982	4.35	0.64	0.69
MAY 24,83	APR 26,83	2363.0	46.2	4.16	D 0.1720	6.20	0.62	0.89
JUN 21,83	MAY 24,83	814.0	66.5	4.00	0.1494	7.75	1.06	0.82
JUL 19,83	JUN 21,83	944.0	30.5	4.38	0.0724	3.75	0.40	0.36
AUG 16,83	JUL 19,83	27.0	*****	U 6.58	0.0366	> 10.00	U 1.75	*****
SEP 13,83	AUG 16,83	396.0	61.0	4.07	0.1188	8.00	0.83	1.23
OCT 11,83	SEP 13,83	2332.0	*****	4.33	0.0716	3.65	0.37	0.46
NOV 8,83	OCT 11,83	1197.0	D 41.0	4.16	0.1072	5.40	0.65	0.76
DEC 6,83	NOV 8,83	2633.0	23.2	4.35	0.0592	2.25	0.40	0.22
JAN 3,84	DEC 6,83	1031.0	25.3	4.33	0.0740	2.45	0.48	0.47

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WILKESPORT/CUMULATIVE PRECIP.

#04

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 4,83	0.47	0.80	0.115	0.055	0.140	0.720	0.007
MAR 1,83	FEB 1,83	U 1.16	1.30	0.160	0.165	U 0.660	D 1.100	0.025
MAR 29,83	MAR 1,83	0.38	0.77	0.145	0.075	0.185	0.460	0.024
APR 26,83	MAR 29,83	0.19	0.43	0.080	0.045	0.065	0.360	0.007
MAY 24,83	APR 26,83	0.23	0.83	0.125	0.095	0.120	0.750	0.019
JUN 21,83	MAY 24,83	0.29	1.02	0.130	0.080	0.065	0.950	0.007
JUL 19,83	JUN 21,83	0.11	0.59	0.055	0.075	0.070	0.500	0.013
AUG 16,83	JUL 19,83	U 1.34	*****	*****	*****	*****	*****	*****
SEP 13,83	AUG 16,83	0.26	0.74	0.150	0.075	0.065	0.710	0.010
OCT 11,83	SEP 13,83	< 0.02	0.40	0.055	< 0.015	0.020	0.340	< 0.002
NOV 8,83	OCT 11,83	D 0.34	0.48	0.095	0.050	0.110	0.450	0.005
DEC 6,83	NOV 8,83	0.13	0.28	0.030	0.020	0.035	0.222	0.005
JAN 3,84	DEC 6,83	0.37	0.25	0.065	< 0.010	0.235	0.130	0.014

REMOVAL DATE	EXPOSURE DATE	MANGANESE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 4,83	0.004	0.001	0.016	0.057	0.015	< 0.002	0.071
MAR 1,83	FEB 1,83	0.006	0.002	0.030	U 2.817	0.022	< 0.002	0.107
MAR 29,83	MAR 1,83	0.013	0.001	0.014	0.342	0.011	< 0.002	0.272
APR 26,83	MAR 29,83	0.006	< 0.001	0.009	0.067	0.007	< 0.002	0.085
MAY 24,83	APR 26,83	0.006	< 0.001	0.007	0.079	0.006	< 0.002	0.048
JUN 21,83	MAY 24,83	0.006	0.002	0.011	0.078	0.010	< 0.002	0.078
JUL 19,83	JUN 21,83	0.003	< 0.001	0.008	0.029	0.005	< 0.002	0.045
AUG 16,83	JUL 19,83	*****	*****	*****	*****	*****	*****	*****
SEP 13,83	AUG 16,83	0.006	< 0.001	0.012	0.089	0.008	< 0.002	0.080
OCT 11,83	SEP 13,83	0.005	0.001	0.005	0.160	0.009	< 0.002	0.174
NOV 8,83	OCT 11,83	0.004	< 0.001	0.012	0.041	0.008	< 0.002	0.052
DEC 6,83	NOV 8,83	0.002	0.001	0.011	0.035	0.005	< 0.002	0.025
JAN 3,84	DEC 6,83	0.003	0.004	0.013	0.032	0.008	< 0.002	0.046

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WILKESPORT/CUMULATIVE PRECIP.

#04

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 4,83	< 0.002	0.0002	0.0692
MAR 1,83	FEB 1,83	0.004	0.0003	0.1862
MAR 29,83	MAR 1,83	0.003	< 0.0001	0.0363
APR 26,83	MAR 29,83	0.001	0.0003	0.0646
MAY 24,83	APR 26,83	0.002	0.0002	0.0692
JUN 21,83	MAY 24,83	< 0.002	0.0002	0.1000
JUL 19,83	JUN 21,83	< 0.002	< 0.0001	0.0417
AUG 16,83	JUL 19,83	*****	*****	U 0.0003
SEP 13,83	AUG 16,83	0.003	0.0001	0.0851
OCT 11,83	SEP 13,83	< 0.001	0.0001	0.0468
NOV 8,83	OCT 11,83	0.001	0.0001	0.0692
DEC 6,83	NOV 8,83	0.001	0.0002	0.0447
JAN 3,84	DEC 6,83	0.001	0.0002	0.0468

PART IV

CENTRAL REGION

CUMULATIVE PRECIPITATION CHEMISTRY LISTINGS

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : CAMPBELLFORD/CUMULATIVE PRECIP. #13

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REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 4,83	800	810	3	38.6	0	24215	2	1	U 54	FI
MAR 1,83	FEB 1,83	815	815	3	70.6	0	24218	2	1	U 56	GH
MAR 29,83	MAR 1,83	815	815	2	79.6	0	24233	2	1	68	
APR 26,83	MAR 29,83	815	925	2	45.6	0	24235	2	1	91	
MAY 24,83	APR 26,83	925	930	1	100.0	0	24244	2	1	U 31	ACGH H
JUN 21,83	MAY 24,83	930	900	1	30.0	0	24254	2	1	62	H
JUL 19,83	JUN 21,83	945	800	1	22.0	0	24271	2	1	65	AD
AUG 16,83	JUL 19,83	800	800	1	67.0	0	24278	2	1	U 45	F H
SEP 13,83	AUG 16,83	800	1100	1	106.0	0	24290	2	1	61	A
OCT 11,83	SEP 13,83	1100	800	1	27.0	0	24297	2	1	229	C N
NOV 8,83	OCT 11,83	800	900	3	70.6	0	24299	2	1	89	C
DEC 6,83	NOV 8,83	900	800	3	92.0	0	24304	2	1	76	M
JAN 3,84	DEC 6,83	800	800	3	109.7	0	24309	2	1	70	

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 4,83	678.0	27.8	4.31	0.0878	2.20	0.54	0.28
MAR 1,83	FEB 1,83	1296.0	17.0	4.52	0.0580	1.00	0.24	0.16
MAR 29,83	MAR 1,83	1779.0	25.5	4.45	0.0600	2.55	0.55	0.47
APR 26,83	MAR 29,83	1352.0	31.5	4.35	0.0794	3.35	0.50	0.49
MAY 24,83	APR 26,83	1013.0	23.4	5.05	0.0358	4.60	0.49	1.07
JUN 21,83	MAY 24,83	607.0	55.2	4.76	0.0594	9.85	G 1.34	U 3.05
JUL 19,83	JUN 21,83	468.0	46.5	U 6.83	0.0290	9.85	G 1.35	U 4.03
AUG 16,83	JUL 19,83	994.0	24.0	U 6.80	0.0214	5.20	0.70	U 2.40
SEP 13,83	AUG 16,83	2119.0	24.2	4.85	0.0356	3.80	0.41	1.13
OCT 11,83	SEP 13,83	2013.0	*****	4.56	0.0624	4.20	D 0.67	0.80
NOV 8,83	OCT 11,83	2051.0	17.3	4.55	0.0472	2.25	0.39	0.37
DEC 6,83	NOV 8,83	2272.0	20.3	4.46	0.0598	1.70	0.40	0.11
JAN 3,84	DEC 6,83	2527.0	*****	*****	*****	*****	*****	*****

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : CAMPBELLFORD/CUMULATIVE PRECIP.

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PAGE : 2

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 4,83	0.22	0.32	0.030	0.020	0.075	0.282	0.013
MAR 1,83	FEB 1,83	0.09	0.43	0.015	0.015	0.050	0.118	0.004
MAR 29,83	MAR 1,83	0.16	0.39	0.045	0.040	0.085	0.310	0.006
APR 26,83	MAR 29,83	0.24	0.47	0.045	0.075	0.120	0.310	0.008
MAY 24,83	APR 26,83	0.16	1.20	0.085	0.115	0.070	0.920	D 0.084
JUN 21,83	MAY 24,83	0.30	1.97	0.215	0.195	0.080	1.350	0.100
JUL 19,83	JUN 21,83	0.31	1.88	0.335	0.280	0.080	1.410	0.086
AUG 16,83	JUL 19,83	0.15	0.75	0.130	0.085	0.020	0.630	0.024
SEP 13,83	AUG 16,83	0.07	0.56	0.060	0.050	0.035	0.430	0.013
OCT 11,83	SEP 13,83	0.25	D 1.47	0.075	D 0.235	0.040	0.890	D 0.101
NOV 8,83	OCT 11,83	0.16	0.33	0.035	0.035	0.075	0.264	0.009
DEC 6,83	NOV 8,83	0.08	0.32	0.015	<T 0.005	0.020	0.178	0.010
JAN 3,84	DEC 6,83	*****	*****	*****	*****	*****	*****	*****

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 4,83	0.002	< 0.001	0.006	0.023	0.008	< 0.002	0.017
MAR 1,83	FEB 1,83	0.001	0.004	0.006	0.076	0.006	< 0.002	U 0.212
MAR 29,83	MAR 1,83	0.003	< 0.001	0.004	0.033	0.005	< 0.002	0.035
APR 26,83	MAR 29,83	0.004	0.001	0.008	0.099	0.010	< 0.002	0.057
MAY 24,83	APR 26,83	0.007	0.001	0.007	0.204	0.008	< 0.002	0.209
JUN 21,83	MAY 24,83	G 0.015	0.002	0.016	0.155	0.018	< 0.002	0.171
JUL 19,83	JUN 21,83	G 0.016	0.002	0.013	0.201	0.009	< 0.002	0.179
AUG 16,83	JUL 19,83	0.008	< 0.001	0.007	0.122	0.010	< 0.002	0.152
SEP 13,83	AUG 16,83	0.004	< 0.001	0.003	0.043	0.004	< 0.002	0.045
OCT 11,83	SEP 13,83	0.007	< 0.001	0.010	0.109	0.012	< 0.002	D 0.105
NOV 8,83	OCT 11,83	0.002	< 0.001	0.004	0.044	0.006	< 0.002	0.026
DEC 6,83	NOV 8,83	< 0.001	< 0.001	0.003	0.009	0.005	< 0.002	0.017
JAN 3,84	DEC 6,83	*****	*****	*****	*****	*****	*****	*****

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : CAMPBELLFORD/CUMULATIVE PRECIP.

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PAGE : 3

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 4,83	0.002	0.0001	0.0490
MAR 1,83	FEB 1,83	0.001	< 0.0001	0.0302
MAR 29,83	MAR 1,83	0.002	0.0001	0.0355
APR 26,83	MAR 29,83	0.002	< 0.0001	0.0447
MAY 24,83	APR 26,83	0.006	0.0003	0.0089
JUN 21,83	MAY 24,83	0.005	0.0002	0.0174
JUL 19,83	JUN 21,83	0.005	0.0002	U 0.0001
AUG 16,83	JUL 19,83	< 0.002	0.0001	U 0.0002
SEP 13,83	AUG 16,83	0.005	< 0.0001	0.0141
OCT 11,83	SEP 13,83	0.001	< 0.0001	0.0275
NOV 8,83	OCT 11,83	< 0.001	< 0.0001	0.0282
DEC 6,83	NOV 8,83	< 0.001	< 0.0001	0.0347
JAN 3,84	DEC 6,83	*****	*****	*****

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : COLDWATER/CUMULATIVE PRECIP.

#12

PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 4,83	730	730	3	66.0	0	29172	2	1	U 32	G
MAR 1,83	FEB 1,83	730	730	3	37.2	9	29183	2	1	105	A
MAR 29,83	MAR 1,83	730	730	3	58.6	9	29189	2	1	U 64	AG
APR 26,83	MAR 29,83	730	700	3	38.0	0	29198	2	1	173	A
MAY 24,83	APR 26,83	700	2000	1	67.0	0	29206	2	1	141	N
JUN 21,83	MAY 24,83	2000	700	1	55.0	0	29223	2	1	93	HM
JUL 19,83	JUN 21,83	730	730	1	46.0	0	29232	2	1	85	AC
AUG 16,83	JUL 19,83	730	730	1	44.0	0	29241	2	1	104	AC
SEP 13,83	AUG 16,83	730	730	1	45.0	0	29242	2	1	94	A
OCT 11,83	SEP 13,83	730	730	1	137.0	0	29251	2	1	100	H
NOV 8,83	OCT 11,83	730	730	1	43.0	0	29254	2	1	135	N
DEC 6,83	NOV 8,83	730	730	3	96.0	0	29264	2	1	72	M
JAN 3,84	DEC 6,83	730	725	3	103.0	0	29269	2	1	53	

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 4,83	690.0	10.8	4.66	0.0578	0.70	0.23	0.08
MAR 1,83	FEB 1,83	1271.0	51.0	3.91	0.1556	3.55	1.02	0.28
MAR 29,83	MAR 1,83	1220.0	26.2	4.42	0.0608	2.40	0.51	0.26
APR 26,83	MAR 29,83	2136.0	31.6	4.28	0.0780	3.05	0.41	0.32
MAY 24,83	APR 26,83	3073.0	30.4	4.34	0.0706	3.70	0.49	0.60
JUN 21,83	MAY 24,83	1668.0	32.6	U 7.11	0.0344	5.65	0.83	0.51
JUL 19,83	JUN 21,83	1272.0	24.0	U 6.62	0.0382	4.90	0.55	0.43
AUG 16,83	JUL 19,83	1490.0	33.4	U 7.51	0.0298	D 4.00	0.37	0.74
SEP 13,83	AUG 16,83	1377.0	11.2	U 6.47	0.0218	1.90	0.24	0.22
OCT 11,83	SEP 13,83	4471.0	31.1	4.40	0.0426	3.05	0.48	0.31
NOV 8,83	OCT 11,83	1887.0	21.7	4.44	0.0496	2.05	0.35	D 0.10
DEC 6,83	NOV 8,83	2274.0	25.7	4.34	0.0712	2.00	0.57	0.22
JAN 3,84	DEC 6,83	1800.0	18.0	4.54	0.0426	1.10	0.37	0.17

PART V

SOUTHEASTERN REGION

CUMULATIVE PRECIPITATION CHEMISTRY LISTINGS

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : COLDWATER/CUMULATIVE PRECIP.

#12

PAGE : 2

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 4,83	0.12	0.22	< 0.005	0.040	0.030	0.160	0.010
MAR 1,83	FEB 1,83	0.38	0.43	0.035	0.030	0.225	0.450	0.010
MAR 29,83	MAR 1,83	0.17	0.42	0.035	0.070	0.095	0.370	0.023
APR 26,83	MAR 29,83	0.22	0.24	0.040	0.050	0.145	0.294	0.036
MAY 24,83	APR 26,83	0.12	0.59	0.085	0.035	0.055	0.480	0.009
JUN 21,83	MAY 24,83	0.38	U 4.28	0.355	0.220	U 0.365	1.580	U 0.510
JUL 19,83	JUN 21,83	0.20	U 2.70	0.135	U 0.740	0.080	1.660	G 0.160
AUG 16,83	JUL 19,83	0.43	0.38	0.195	U 1.550	D 0.180	U 2.500	0.019
SEP 13,83	AUG 16,83	0.10	0.89	0.030	0.170	0.050	0.640	0.097
OCT 11,83	SEP 13,83	0.07	0.42	0.040	0.040	0.020	0.400	0.007
NOV 8,83	OCT 11,83	0.11	0.27	0.025	0.035	0.070	0.220	0.013
DEC 6,83	NOV 8,83	0.15	0.31	0.020	< 0.015	0.045	0.148	0.012
JAN 3,84	DEC 6,83	0.16	0.10	0.020	<W 0.005	0.070	0.070	0.006

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 4,83	< 0.001	< 0.001	0.003	0.045	0.007	< 0.002	0.022
MAR 1,83	FEB 1,83	0.002	< 0.001	0.009	0.037	0.012	< 0.002	0.034
MAR 29,83	MAR 1,83	0.002	< 0.001	0.006	0.048	0.007	< 0.002	0.034
APR 26,83	MAR 29,83	0.003	< 0.001	0.006	0.027	0.005	< 0.002	0.042
MAY 24,83	APR 26,83	0.006	< 0.001	0.004	0.066	0.007	< 0.002	0.041
JUN 21,83	MAY 24,83	0.008	0.001	G 0.024	0.038	0.009	< 0.002	0.047
JUL 19,83	JUN 21,83	*****	*****	*****	*****	*****	*****	*****
AUG 16,83	JUL 19,83	0.008	0.002	0.011	0.094	0.003	< 0.002	0.059
SEP 13,83	AUG 16,83	0.004	< 0.001	0.003	0.022	0.002	< 0.002	0.028
OCT 11,83	SEP 13,83	0.003	< 0.001	0.007	0.041	0.003	< 0.002	0.026
NOV 8,83	OCT 11,83	0.001	< 0.001	0.004	0.018	0.004	< 0.002	0.015
DEC 6,83	NOV 8,83	0.002	< 0.001	0.004	0.017	0.004	< 0.002	0.017
JAN 3,84	DEC 6,83	< 0.001	< 0.001	0.004	0.015	0.004	< 0.002	0.018

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : COLDWATER/CUMULATIVE PRECIP.

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PAGE : 3

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 4,83	0.002	< 0.0001	0.0219
MAR 1,83	FEB 1,83	0.001	0.0001	0.1230
MAR 29,83	MAR 1,83	0.001	0.0017	0.0380
APR 26,83	MAR 29,83	0.001	0.0001	0.0525
MAY 24,83	APR 26,83	0.001	< 0.0001	0.0457
JUN 21,83	MAY 24,83	0.002	0.0001	U 0.0001
JUL 19,83	JUN 21,83	*****	*****	U 0.0002
AUG 16,83	JUL 19,83	0.003	0.0002	U 0.0000
SEP 13,83	AUG 16,83	< 0.002	< 0.0001	U 0.0003
OCT 11,83	SEP 13,83	0.001	< 0.0001	0.0398
NOV 8,83	OCT 11,83	< 0.002	< 0.0001	0.0363
DEC 6,83	NOV 8,83	0.001	< 0.0001	0.0457
JAN 3,84	DEC 6,83	< 0.002	< 0.0001	0.0288

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DORSET/CUMULATIVE PRECIP.

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PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 4,83	1000	835	4	66.0	0	29169	2	1	U 81	FL
MAR 1,83	FEB 1,83	840	825	4	43.0	0	29179	2	1	94	
MAR 29,83	MAR 1,83	825	900	4	54.0	0	29187	2	1	73	HM
APR 26,83	MAR 29,83	900	910	1	66.0	0	29195	2	1	83	
MAY 24,83	APR 26,83	910	840	1	163.0	0	29207	2	1	89	
JUN 21,83	MAY 24,83	840	1500	1	32.0	0	29213	2	1	84	
JUL 19,83	JUN 21,83	1500	830	1	27.0	0	29229	2	1	93	BC
AUG 16,83	JUL 19,83	830	845	1	47.0	0	29236	2	1	100	
SEP 13,83	AUG 16,83	845	930	1	64.0	0	29245	2	1	89	A
OCT 11,83	SEP 13,83	930	900	1	149.0	0	29248	2	1	94	
NOV 8,83	OCT 11,83	900	900	1	87.0	0	29256	2	1	95	
DEC 6,83	NOV 8,83	900	1120	2	79.0	0	29260	2	1	86	HM
JAN 3,84	DEC 6,83	1120	1500	3	90.0	0	29266	2	1	85	

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 4,83	1736.0	28.6	4.26	0.1000	1.80	0.52	0.05
MAR 1,83	FEB 1,83	1317.0	31.4	4.16	0.0918	2.20	0.52	0.06
MAR 29,83	MAR 1,83	1295.0	31.8	4.28	0.0810	2.40	0.53	0.10
APR 26,83	MAR 29,83	1800.0	32.5	4.31	0.0816	2.90	0.39	0.24
MAY 24,83	APR 26,83	4730.0	25.9	4.35	0.0704	2.75	0.39	0.30
JUN 21,83	MAY 24,83	882.0	46.8	4.17	0.1130	5.45	0.83	0.63
JUL 19,83	JUN 21,83	817.0	32.0	4.31	0.0856	4.20	0.42	0.41
AUG 16,83	JUL 19,83	1535.0	28.0	4.34	0.0712	3.25	0.37	0.24
SEP 13,83	AUG 16,83	1852.0	34.5	4.30	0.0760	3.65	0.48	0.38
OCT 11,83	SEP 13,83	4556.0	24.9	4.42	0.0432	2.25	0.35	0.20
NOV 8,83	OCT 11,83	2691.0	18.5	4.50	0.0470	1.55	0.27	0.04
DEC 6,83	NOV 8,83	2228.0	27.5	4.19	0.0820	2.05	0.58	0.11
JAN 3,84	DEC 6,83	2502.0	20.3	4.41	0.0500	0.95	0.44	0.06

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DORSET/CUMULATIVE PRECIP.

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PAGE : 2

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 4,83	0.11	0.20	<W 0.005	0.010	0.035	0.162	0.010
MAR 1,83	FEB 1,83	0.11	0.25	0.010	0.060	0.105	0.214	< 0.003
MAR 29,83	MAR 1,83	U 0.80	0.29	0.010	0.030	0.070	0.252	< 0.002
APR 26,83	MAR 29,83	0.13	0.58	0.030	0.030	0.055	0.180	0.010
MAY 24,83	APR 26,83	0.07	0.38	0.045	0.020	0.040	0.314	< 0.004
JUN 21,83	MAY 24,83	0.13	0.84	0.140	0.050	0.040	0.650	0.014
JUL 19,83	JUN 21,83	0.12	0.59	0.060	0.070	0.070	0.590	0.007
AUG 16,83	JUL 19,83	0.06	0.41	0.050	0.030	0.015	0.400	0.006
SEP 13,83	AUG 16,83	0.11	0.61	0.045	0.040	0.065	0.330	0.027
OCT 11,83	SEP 13,83	0.02	0.26	0.030	0.020	0.020	0.234	0.004
NOV 8,83	OCT 11,83	0.06	0.23	0.010	0.030	0.035	0.184	0.005
DEC 6,83	NOV 8,83	0.13	D 0.60	0.015	< 0.010	0.020	D 0.680	0.009
JAN 3,84	DEC 6,83	0.11	0.08	0.015	<W 0.005	0.045	0.048	0.005

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 4,83	0.001	0.001	0.004	0.010	0.007	< 0.002	0.011
MAR 1,83	FEB 1,83	< 0.001	< 0.001	0.005	0.013	D 0.004	< 0.002	0.016
MAR 29,83	MAR 1,83	0.001	< 0.001	0.005	0.039	0.004	< 0.002	0.047
APR 26,83	MAR 29,83	0.002	< 0.001	0.004	0.017	0.004	< 0.002	0.031
MAY 24,83	APR 26,83	0.003	< 0.001	0.007	0.032	D 0.014	< 0.002	0.022
JUN 21,83	MAY 24,83	0.009	< 0.001	0.008	0.114	0.008	< 0.002	0.110
JUL 19,83	JUN 21,83	0.005	< 0.001	0.003	0.059	0.004	< 0.002	0.078
AUG 16,83	JUL 19,83	0.004	< 0.001	< 0.003	0.036	0.005	< 0.002	0.060
SEP 13,83	AUG 16,83	0.003	< 0.001	0.004	0.044	0.004	< 0.002	0.047
OCT 11,83	SEP 13,83	0.001	< 0.001	0.002	0.009	0.004	< 0.002	0.014
NOV 8,83	OCT 11,83	< 0.001	< 0.001	0.002	0.006	0.004	< 0.002	0.006
DEC 6,83	NOV 8,83	0.001	< 0.001	0.004	0.016	0.004	< 0.002	0.016
JAN 3,84	DEC 6,83	< 0.001	0.001	< 0.003	0.008	0.001	< 0.002	0.013

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DORSET/CUMULATIVE PRECIP.

#20

PAGE : 3

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 4,83	0.002	0.0004	0.0550
MAR 1,83	FEB 1,83	< 0.002	< 0.0001	0.0692
MAR 29,83	MAR 1,83	0.001	0.0001	0.0525
APR 26,83	MAR 29,83	< 0.002	0.0001	0.0490
MAY 24,83	APR 26,83	0.001	< 0.0001	0.0447
JUN 21,83	MAY 24,83	< 0.002	0.0001	0.0676
JUL 19,83	JUN 21,83	< 0.002	< 0.0001	0.0490
AUG 16,83	JUL 19,83	0.001	0.0001	0.0457
SEP 13,83	AUG 16,83	0.001	< 0.0001	0.0501
OCT 11,83	SEP 13,83	0.001	< 0.0001	0.0380
NOV 8,83	OCT 11,83	< 0.001	< 0.0001	0.0316
DEC 6,83	NOV 8,83	< 0.001	< 0.0001	0.0646
JAN 3,84	DEC 6,83	< 0.001	< 0.0001	0.0389

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MILTON/CUMULATIVE PRECIP.

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PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 4,83	930	930	3	27.0	0	40007	2	1	83	HM
MAR 1,83	FEB 1,83	930	900	3	52.0	0	40016	2	1	83	H
MAR 29,83	MAR 1,83	900	830	3	37.0	0	40026	2	1	17	N
APR 26,83	MAR 29,83	830	845	1	55.0	0	40041	2	1	U 52	F
MAY 24,83	APR 26,83	845	900	1	104.0	0	40060	2	1	U 7	F H
JUN 21,83	MAY 24,83	900	900	1	48.0	0	40073	2	1	45	AC N
JUL 19,83	JUN 21,83	900	900	1	67.0	0	40081	2	1	65	
AUG 16,83	JUL 19,83	900	900	1	101.0	0	38283	2	1	67	
SEP 13,83	AUG 16,83	900	930	1	51.0	0	38286	2	1	71	C H
OCT 11,83	SEP 13,83	930	900	1	72.0	0	38290	2	1	65	CD HCM
NOV 8,83	OCT 11,83	900	900	3	81.0	0	40087	2	1	U 72	G CM
DEC 6,83	NOV 8,83	900	1000	3	17.0	0	40106	2	1	U 465	G
JAN 3,84	DEC 6,83	1000	1245	3	96.9	9	40111	2	1	51	

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 4,83	730.0	35.5	U 7.08	0.0270	5.95	1.00	U 5.00
MAR 1,83	FEB 1,83	1410.0	29.5	4.58	0.0550	4.05	0.70	1.14
MAR 29,83	MAR 1,83	216.0	5.5	*****	*****	1.10	U 0.15	0.63
APR 26,83	MAR 29,83	932.0	35.6	4.38	0.0788	4.55	0.77	0.99
MAY 24,83	APR 26,83	241.0	22.6	U 5.75	0.0294	D 5.00	0.51	0.97
JUN 21,83	MAY 24,83	705.0	35.4	U 7.17	0.0194	7.80	0.88	U 2.43
JUL 19,83	JUN 21,83	1431.0	32.3	U 7.32	0.0198	6.25	0.57	U 2.33
AUG 16,83	JUL 19,83	2214.0	28.0	G 4.93	0.0358	5.40	0.57	1.21
SEP 13,83	AUG 16,83	1177.0	23.2	4.79	0.0436	4.05	0.44	0.98
OCT 11,83	SEP 13,83	1526.0	29.2	4.16	0.0884	4.50	0.59	0.92
NOV 8,83	OCT 11,83	1908.0	16.9	U 7.66	0.0138	3.30	0.44	1.60
DEC 6,83	NOV 8,83	2570.0	22.6	4.60	0.0506	3.00	0.56	D 0.63
JAN 3,84	DEC 6,83	1617.0	25.2	4.36	0.0628	2.45	0.48	0.41

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MILTON/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 4,83	0.77	0.82	U 2.450	0.035	0.365	0.630	0.006
MAR 1,83	FEB 1,83	0.65	0.46	0.490	0.020	0.340	0.376	0.015
MAR 29,83	MAR 1,83	0.23	0.32	0.270	0.030	0.100	0.162	0.019
APR 26,83	MAR 29,83	0.28	0.63	0.275	0.050	0.100	0.450	0.018
MAY 24,83	APR 26,83	0.23	U 1.86	0.350	0.180	0.070	1.100	U 0.118
JUN 21,83	MAY 24,83	0.30	1.27	U 1.060	0.075	0.055	0.950	0.027
JUL 19,83	JUN 21,83	0.35	0.97	U 1.020	0.055	0.090	0.820	0.010
AUG 16,83	JUL 19,83	0.17	0.69	U 0.530	0.045	0.040	0.620	0.011
SEP 13,83	AUG 16,83	0.17	0.76	0.390	0.060	0.075	0.440	0.018
OCT 11,83	SEP 13,83	0.16	0.62	U 0.410	0.045	0.020	0.530	0.007
NOV 8,83	OCT 11,83	0.25	0.44	U 7.250	0.035	0.105	0.338	0.010
DEC 6,83	NOV 8,83	0.31	0.43	0.250	0.050	0.110	0.326	0.007
JAN 3,84	DEC 6,83	0.78	0.30	0.120	< 0.005	0.420	0.208	0.013

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 4,83	G 0.018	< 0.001	0.014	0.113	0.006	< 0.002	0.054
MAR 1,83	FEB 1,83	0.006	< 0.001	0.015	0.063	0.014	< 0.002	0.047
MAR 29,83	MAR 1,83	*****	*****	*****	*****	*****	*****	*****
APR 26,83	MAR 29,83	0.006	< 0.001	0.011	0.115	0.009	< 0.002	0.156
MAY 24,83	APR 26,83	0.008	< 0.001	0.017	U 0.451	0.004	< 0.002	U 0.456
JUN 21,83	MAY 24,83	G 0.018	0.001	0.016	G 0.223	0.015	< 0.002	0.175
JUL 19,83	JUN 21,83	0.004	< 0.001	0.005	0.064	0.003	< 0.002	0.038
AUG 16,83	JUL 19,83	0.007	< 0.001	0.006	D 0.067	0.008	< 0.002	0.057
SEP 13,83	AUG 16,83	0.005	< 0.001	0.006	0.051	0.008	< 0.002	0.030
OCT 11,83	SEP 13,83	0.006	< 0.001	0.007	0.033	0.003	< 0.002	0.029
NOV 8,83	OCT 11,83	0.006	< 0.001	0.008	0.023	0.006	< 0.002	0.008
DEC 6,83	NOV 8,83	0.004	< 0.001	0.016	0.034	0.011	< 0.002	0.029
JAN 3,84	DEC 6,83	0.003	< 0.001	0.008	0.033	0.011	< 0.002	0.029

ONTARIO MINISTRY OF THE ENVIRONMENT
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 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MILTON/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 4,83	0.002	0.0002	U 0.0001
MAR 1,83	FEB 1,83	< 0.002	0.0002	0.0263
MAR 29,83	MAR 1,83	*****	*****	*****
APR 26,83	MAR 29,83	0.002	< 0.0001	0.0417
MAY 24,83	APR 26,83	0.009	< 0.0001	U 0.0018
JUN 21,83	MAY 24,83	< 0.002	< 0.0001	U 0.0001
JUL 19,83	JUN 21,83	0.002	< 0.0001	U 0.0000
AUG 16,83	JUL 19,83	0.001	< 0.0001	G 0.0117
SEP 13,83	AUG 16,83	< 0.002	< 0.0001	0.0162
OCT 11,83	SEP 13,83	< 0.002	< 0.0001	0.0692
NOV 8,83	OCT 11,83	< 0.002	< 0.0001	U 0.0000
DEC 6,83	NOV 8,83	0.001	0.0001	0.0251
JAN 3,84	DEC 6,83	< 0.002	0.0001	0.0437

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : UXBRIDGE/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
JAN 31,83	JAN 3,83	1600	1530	1	36.0	0	40005	2	1	67	
MAR 1,83	JAN 31,83	1530	1030	3	30.0	0	40014	2	1	100	
MAR 29,83	MAR 1,83	1030	1020	3	52.0	0	40022	2	1	72	
APR 25,83	MAR 29,83	1020	1700	1	56.0	0	40044	2	1	U 40	G HCM
MAY 24,83	APR 25,83	1800	600	1	100.0	0	40062	2	1	75	
JUN 21,83	MAY 24,83	630	600	1	33.0	0	40075	2	1	48	AC N
JUL 18,83	JUN 21,83	600	1900	1	25.0	0	40080	2	1	71	
AUG 15,83	JUL 18,83	1900	1800	1	95.0	0	38284	2	1	67	
SEP 12,83	AUG 15,83	1800	1830	1	40.0	0	38287	2	1	46	D N
OCT 10,83	SEP 12,83	1830	1500	1	75.0	0	38289	2	1	76	A
NOV 7,83	OCT 10,83	1500	1700	3	70.0	0	40088	2	1	72	CD HCM
DEC 6,83	NOV 7,83	1700	1000	3	61.5	9	40107	2	1	72	
JAN 2,84	DEC 6,83	1000	1700	3	76.0	0	40112	2	1	U 65	FJ

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
JAN 31,83	JAN 3,83	791.0	42.2	4.04	0.1198	3.35	0.94	*****
MAR 1,83	JAN 31,83	980.0	43.2	4.17	0.1056	3.90	0.83	0.70
MAR 29,83	MAR 1,83	1225.0	26.9	4.35	D 0.0814	2.90	0.49	0.58
APR 25,83	MAR 29,83	742.0	D 22.1	G 5.08	D 0.0364	3.15	0.68	0.18
MAY 24,83	APR 25,83	2444.0	16.2	U 6.59	0.0172	3.50	0.39	1.71
JUN 21,83	MAY 24,83	520.0	47.9	U 7.54	0.0184	7.00	G 1.08	U 5.30
JUL 18,83	JUN 21,83	583.0	41.5	4.76	0.0498	7.80	G 1.07	U 2.53
AUG 15,83	JUL 18,83	2084.0	34.8	4.50	0.0596	5.15	0.67	1.27
SEP 12,83	AUG 15,83	606.0	48.0	4.39	0.0796	7.75	0.90	2.59
OCT 10,83	SEP 12,83	1863.0	34.8	4.22	0.0644	3.25	0.47	0.37
NOV 7,83	OCT 10,83	1655.0	19.5	G 5.46	0.0520	2.60	0.39	0.38
DEC 6,83	NOV 7,83	1447.0	19.7	4.46	0.0590	2.10	0.48	0.28
JAN 2,84	DEC 6,83	1619.0	20.6	4.47	0.0486	1.35	0.48	0.32

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : UXBRIDGE/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
JAN 31,83	JAN 3,83	0.33	0.62	*****	*****	*****	0.350	0.011
MAR 1,83	JAN 31,83	0.42	0.70	0.035	0.015	0.300	0.490	0.009
MAR 29,83	MAR 1,83	0.20	0.44	0.050	0.025	0.120	0.358	0.016
APR 25,83	MAR 29,83	0.22	0.99	0.070	U 0.490	0.120	0.410	G 0.110
MAY 24,83	APR 25,83	0.15	0.42	0.105	0.045	0.055	0.376	0.011
JUN 21,83	MAY 24,83	0.35	1.46	0.315	0.075	0.075	1.050	0.019
JUL 18,83	JUN 21,83	0.48	1.50	0.280	0.125	0.195	1.130	0.020
AUG 15,83	JUL 18,83	0.20	0.83	0.090	0.045	0.025	0.760	0.023
SEP 12,83	AUG 15,83	0.29	1.23	0.130	0.060	0.070	0.800	0.022
OCT 10,83	SEP 12,83	0.07	0.43	0.040	0.035	< 0.010	0.296	0.003
NOV 7,83	OCT 10,83	0.10	0.48	0.065	0.035	0.025	0.354	0.011
DEC 6,83	NOV 7,83	0.14	0.35	0.030	< 0.015	0.050	0.256	0.009
JAN 2,84	DEC 6,83	0.34	0.25	0.025	< 0.005	0.180	0.094	0.019

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
JAN 31,83	JAN 3,83	0.004	< 0.001	0.007	0.038	0.011	< 0.002	0.030
MAR 1,83	JAN 31,83	0.002	< 0.001	0.008	0.044	0.008	< 0.002	0.014
MAR 29,83	MAR 1,83	0.006	< 0.001	0.008	0.009	0.010	< 0.002	D 0.059
APR 25,83	MAR 29,83	0.008	< 0.001	0.009	0.079	0.005	< 0.002	0.089
MAY 24,83	APR 25,83	0.004	< 0.001	0.005	0.096	0.002	< 0.002	0.104
JUN 21,83	MAY 24,83	0.008	< 0.001	0.014	0.197	< 0.007	< 0.002	0.117
JUL 18,83	JUN 21,83	0.013	0.001	0.010	0.137	0.008	< 0.002	0.107
AUG 15,83	JUL 18,83	0.004	< 0.001	0.004	0.062	0.006	< 0.002	0.040
SEP 12,83	AUG 15,83	0.008	< 0.001	0.008	0.091	0.012	< 0.002	0.061
OCT 10,83	SEP 12,83	0.003	< 0.001	0.004	0.016	0.006	< 0.002	0.023
NOV 7,83	OCT 10,83	0.002	< 0.001	0.005	0.022	0.003	< 0.002	0.019
DEC 6,83	NOV 7,83	0.002	< 0.001	0.006	0.033	0.003	< 0.002	D 0.035
JAN 2,84	DEC 6,83	0.002	0.001	0.006	0.045	0.007	< 0.002	0.054

ONTARIO MINISTRY OF THE ENVIRONMENT
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 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : UXBRIDGE/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
JAN 31,83	JAN 3,83	0.002	< 0.0001	0.0912
MAR 1,83	JAN 31,83	< 0.002	0.0003	0.0676
MAR 29,83	MAR 1,83	0.001	0.0008	0.0447
APR 25,83	MAR 29,83	< 0.002	U 0.0060	G 0.0083
MAY 24,83	APR 25,83	< 0.001	< 0.0001	U 0.0003
JUN 21,83	MAY 24,83	0.003	< 0.0001	U 0.0000
JUL 18,83	JUN 21,83	0.002	0.0002	0.0174
AUG 15,83	JUL 18,83	0.002	< 0.0001	0.0316
SEP 12,83	AUG 15,83	< 0.003	< 0.0001	0.0407
OCT 10,83	SEP 12,83	0.001	< 0.0001	0.0603
NOV 7,83	OCT 10,83	< 0.002	0.0003	G 0.0035
DEC 6,83	NOV 7,83	0.001	0.0001	0.0347
JAN 2,84	DEC 6,83	0.001	< 0.0001	0.0339

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WILBERFORCE/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 4,83	830	900	4	45.0	0	29171	2	1	91	
MAR 1,83	FEB 1,83	900	800	4	52.0	0	29181	2	1	79	C
MAR 29,83	MAR 1,83	800	1000	4	52.0	0	29188	2	1	U 69	AG
APR 26,83	MAR 29,83	1000	900	1	72.1	9	29197	2	1	84	
MAY 24,83	APR 26,83	900	900	1	181.0	0	29205	2	1	85	
JUN 21,83	MAY 24,83	900	800	1	41.0	0	29224	2	1	83	
JUL 19,83	JUN 21,83	800	830	1	41.0	0	29233	2	1	83	AC
AUG 16,83	JUL 19,83	830	700	1	83.0	0	29239	2	1	U 72	FI HCM
SEP 13,83	AUG 16,83	700	830	1	52.0	0	29243	2	1	79	
OCT 11,83	SEP 13,83	830	800	1	105.0	0	29252	2	1	82	HCM
NOV 9,83	OCT 11,83	800	1100	1	92.0	0	29255	2	1	76	
DEC 6,83	NOV 9,83	1100	900	2	81.0	0	29263	2	1	88	
JAN 3,84	DEC 6,83	900	930	3	76.0	0	29276	2	1	U 65	G

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 4,83	1335.0	31.1	4.24	0.0992	1.80	0.63	0.11
MAR 1,83	FEB 1,83	1341.0	39.5	4.10	0.1088	2.90	0.65	0.08
MAR 29,83	MAR 1,83	1165.0	21.6	4.51	0.0564	1.80	0.39	0.12
APR 26,83	MAR 29,83	1976.0	33.4	4.28	0.0874	2.90	0.41	0.23
MAY 24,83	APR 26,83	5010.0	24.5	4.37	0.0646	2.65	0.33	0.31
JUN 21,83	MAY 24,83	1105.0	43.2	4.17	0.1090	4.35	0.65	0.32
JUL 19,83	JUN 21,83	1107.0	46.5	4.10	0.1124	5.70	0.43	0.39
AUG 16,83	JUL 19,83	1964.0	30.0	4.39	0.0828	3.10	0.31	0.13
SEP 13,83	AUG 16,83	1337.0	48.2	4.13	0.1048	5.40	0.69	0.60
OCT 11,83	SEP 13,83	2826.0	39.7	4.35	0.0472	3.30	0.61	0.25
NOV 9,83	OCT 11,83	2298.0	21.1	4.42	0.0510	1.80	0.35	0.06
DEC 6,83	NOV 9,83	2327.0	20.4	4.38	0.0600	1.50	0.43	0.08
JAN 3,84	DEC 6,83	1622.0	17.2	4.52	0.0488	0.70	0.36	0.05

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WILBERFORCE/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 4,83	0.17	0.26	<W 0.005	0.010	0.075	0.216	0.004
MAR 1,83	FEB 1,83	0.13	0.41	0.015	0.020	0.055	0.326	< 0.002
MAR 29,83	MAR 1,83	0.08	0.32	0.020	0.045	0.060	0.242	G 0.038
APR 26,83	MAR 29,83	0.13	0.29	0.035	0.020	0.055	0.182	0.007
MAY 24,83	APR 26,83	0.07	0.36	0.045	0.035	0.050	0.320	0.008
JUN 21,83	MAY 24,83	0.10	0.51	0.075	0.030	0.025	0.510	0.010
JUL 19,83	JUN 21,83	0.10	0.60	0.070	0.090	0.050	0.560	0.013
AUG 16,83	JUL 19,83	0.07	0.32	0.025	0.025	<W 0.005	0.276	< 0.004
SEP 13,83	AUG 16,83	0.13	0.59	0.085	0.035	0.060	0.520	0.006
OCT 11,83	SEP 13,83	0.08	0.42	0.035	0.025	< 0.010	0.390	0.005
NOV 9,83	OCT 11,83	0.07	0.26	0.015	0.025	0.040	0.200	0.010
DEC 6,83	NOV 9,83	0.10	0.21	0.010	0.025	0.035	0.212	0.006
JAN 3,84	DEC 6,83	0.11	0.10	0.010	<W 0.005	0.055	0.056	< 0.002

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 4,83	0.001	< 0.001	0.005	0.016	0.006	< 0.002	0.010
MAR 1,83	FEB 1,83	0.001	< 0.001	0.006	0.019	0.008	< 0.002	0.008
MAR 29,83	MAR 1,83	0.002	< 0.001	0.003	0.045	0.002	< 0.002	0.067
APR 26,83	MAR 29,83	0.002	< 0.001	0.003	0.023	0.004	< 0.002	0.031
MAY 24,83	APR 26,83	0.004	< 0.001	0.003	0.077	0.006	< 0.002	0.090
JUN 21,83	MAY 24,83	0.004	< 0.001	0.006	0.022	0.008	< 0.002	0.033
JUL 19,83	JUN 21,83	0.005	< 0.001	0.006	0.056	0.005	< 0.002	0.045
AUG 16,83	JUL 19,83	0.001	< 0.001	0.003	0.020	0.004	< 0.002	0.049
SEP 13,83	AUG 16,83	0.005	< 0.001	0.006	0.066	0.010	< 0.002	0.062
OCT 11,83	SEP 13,83	0.003	< 0.001	0.004	0.020	0.004	< 0.002	0.025
NOV 9,83	OCT 11,83	0.001	< 0.001	0.004	0.011	0.007	< 0.002	0.016
DEC 6,83	NOV 9,83	0.001	< 0.001	0.004	0.021	0.004	< 0.002	0.017
JAN 3,84	DEC 6,83	< 0.001	< 0.001	< 0.003	0.021	0.002	< 0.002	0.016

ONTARIO MINISTRY OF THE ENVIRONMENT
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 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WILBERFORCE/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 4,83	0.001	0.0002	0.0575
MAR 1,83	FEB 1,83	< 0.002	0.0001	0.0794
MAR 29,83	MAR 1,83	0.002	< 0.0001	0.0309
APR 26,83	MAR 29,83	< 0.002	< 0.0001	0.0525
MAY 24,83	APR 26,83	0.001	< 0.0001	0.0427
JUN 21,83	MAY 24,83	< 0.002	0.0001	0.0676
JUL 19,83	JUN 21,83	0.002	< 0.0001	0.0794
AUG 16,83	JUL 19,83	< 0.002	0.0001	0.0407
SEP 13,83	AUG 16,83	0.002	< 0.0001	0.0741
OCT 11,83	SEP 13,83	0.001	< 0.0001	0.0447
NOV 9,83	OCT 11,83	< 0.001	< 0.0001	0.0380
DEC 6,83	NOV 9,83	< 0.001	0.0001	0.0417
JAN 3,84	DEC 6,83	< 0.002	< 0.0001	0.0302

PART V

SOUTHEASTERN REGION

CUMULATIVE PRECIPITATION CHEMISTRY LISTINGS

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DALHOUSIE MILLS/CUMULATIVE PRECIP. #16

PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 4,83	900	700	3	65.5	0	24211	2	1	74	
MAR 1,83	FEB 1,83	800	800	3	69.2	0	24220	2	1	U 70	GH
MAR 29,83	MAR 1,83	900	800	2	78.0	0	24231	2	1	U 30	GH
APR 25,83	MAR 29,83	800	900	2	107.5	0	24240	2	1	67	A
MAY 24,83	APR 26,83	900	800	1	83.0	0	24250	2	1	84	
JUN 21,83	MAY 24,83	800	700	1	58.0	0	24259	2	1	49	ACD N
JUL 19,83	JUN 21,83	800	700	1	64.0	0	24273	2	1	32	A N
AUG 16,83	JUL 19,83	800	800	1	74.0	0	24276	2	1	78	CDB
SEP 13,83	AUG 16,83	800	700	1	16.0	0	24288	2	1	62	A H
OCT 11,83	SEP 13,83	800	700	1	120.0	0	24298	2	1	U 7	G
NOV 8,83	OCT 11,83	800	900	3	62.0	0	24300	2	1	U 102	F
DEC 6,83	NOV 8,83	900	830	2	76.0	0	24306	2	1	65	
JAN 3,84	DEC 6,83	830	800	3	139.6	0	24311	2	1	U 59	FI

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 4,83	1593.0	23.2	4.66	0.0686	2.45	0.56	D 0.76
MAR 1,83	FEB 1,83	1582.0	22.5	4.56	0.0488	2.45	0.45	D 0.75
MAR 29,83	MAR 1,83	772.0	9.9	U 6.13	0.0158	1.60	0.24	D 0.52
APR 25,83	MAR 29,83	2370.0	20.9	4.62	0.0506	2.65	0.32	0.51
MAY 24,83	APR 26,83	2265.0	32.6	4.36	0.0726	4.05	0.50	0.49
JUN 21,83	MAY 24,83	923.0	50.8	4.18	0.1102	5.75	0.78	0.64
JUL 19,83	JUN 21,83	682.0	25.8	4.52	0.0532	3.85	0.47	0.58
AUG 16,83	JUL 19,83	1892.0	16.0	U 7.02	0.0252	2.95	0.26	0.49
SEP 13,83	AUG 16,83	323.0	57.5	U 4.33	0.0962	U 9.40	G 1.09	U 1.66
OCT 11,83	SEP 13,83	310.0	*****	G 4.75	0.0494	2.50	0.31	0.32
NOV 8,83	OCT 11,83	2071.0	22.7	4.46	0.0596	2.65	0.47	0.37
DEC 6,83	NOV 8,83	1616.0	17.4	4.64	0.0458	1.85	0.41	0.37
JAN 3,84	DEC 6,83	2716.0	12.3	4.68	0.0364	0.80	0.25	0.08

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DALHOUSIE MILLS/CUMULATIVE PRECIP. #16

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIUM MG/L	POTASSIUM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 4,83	U 0.89	D 0.68	D 0.060	0.050	U 0.610	D 0.430	0.011
MAR 1,83	FEB 1,83	U 0.77	0.51	0.050	0.035	U 0.580	0.318	0.006
MAR 29,83	MAR 1,83	0.29	0.43	0.060	0.040	0.195	0.400	0.005
APR 25,83	MAR 29,83	0.20	0.52	0.055	0.025	0.125	D 0.276	0.005
MAY 24,83	APR 26,83	0.12	0.76	0.060	0.065	0.050	0.620	0.025
JUN 21,83	MAY 24,83	0.15	0.95	0.100	0.085	0.050	0.800	0.012
JUL 19,83	JUN 21,83	0.09	1.04	0.065	0.065	0.025	0.750	0.035
AUG 16,83	JUL 19,83	0.18	G 1.65	0.080	U 0.410	0.015	G 1.140	U 0.128
SEP 13,83	AUG 16,83	B 0.38	B 1.67	U 0.235	U 0.335	G 0.185	G 1.340	B 0.097
OCT 11,83	SEP 13,83	<T 0.01	D 1.12	0.050	D 0.085	U 0.160	0.420	D 0.039
NOV 8,83	OCT 11,83	0.18	0.44	0.050	0.070	0.085	0.332	0.011
DEC 6,83	NOV 8,83	0.15	0.26	0.035	0.020	0.100	0.218	0.010
JAN 3,84	DEC 6,83	0.13	0.19	0.010	<T 0.005	0.035	0.092	0.007

REMOVAL DATE	EXPOSURE DATE	MANGANESE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 4,83	0.010	< 0.001	D 0.014	0.032	0.008	0.002	0.032
MAR 1,83	FEB 1,83	0.009	< 0.001	0.009	0.038	0.008	< 0.002	0.021
MAR 29,83	MAR 1,83	0.014	< 0.001	L 0.010	L 0.100	0.006	0.003	L 0.113
APR 25,83	MAR 29,83	0.003	< 0.001	0.008	0.061	0.004	< 0.002	0.031
MAY 24,83	APR 26,83	0.005	0.001	0.007	0.037	0.004	< 0.002	0.042
JUN 21,83	MAY 24,83	0.011	0.001	0.010	0.055	0.012	< 0.002	0.084
JUL 19,83	JUN 21,83	0.005	< 0.001	0.006	0.073	0.008	< 0.002	0.065
AUG 16,83	JUL 19,83	0.003	< 0.001	0.007	0.047	0.003	< 0.002	0.071
SEP 13,83	AUG 16,83	G 0.014	< 0.001	G 0.020	0.164	0.010	< 0.002	0.186
OCT 11,83	SEP 13,83	*****	*****	*****	*****	*****	*****	*****
NOV 8,83	OCT 11,83	0.003	< 0.001	0.008	0.037	0.007	< 0.002	D 0.034
DEC 6,83	NOV 8,83	0.004	< 0.001	0.009	0.017	0.003	< 0.002	0.021
JAN 3,84	DEC 6,83	0.002	0.001	0.004	0.019	0.004	< 0.002	0.017

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DALHOUSIE MILLS/CUMULATIVE PRECIP. #16

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 4,83	0.001	< 0.0001	0.0219
MAR 1,83	FEB 1,83	< 0.002	< 0.0001	0.0275
MAR 29,83	MAR 1,83	L< 0.001	< 0.0001	U 0.0007
APR 25,83	MAR 29,83	0.001	< 0.0001	0.0240
MAY 24,83	APR 26,83	< 0.001	< 0.0001	0.0437
JUN 21,83	MAY 24,83	0.002	0.0001	0.0661
JUL 19,83	JUN 21,83	0.004	0.0002	0.0302
AUG 16,83	JUL 19,83	0.002	0.0002	U 0.0001
SEP 13,83	AUG 16,83	< 0.004	< 0.0001	U 0.0468
OCT 11,83	SEP 13,83	*****	*****	G 0.0178
NOV 8,83	OCT 11,83	0.001	< 0.0001	0.0347
DEC 6,83	NOV 8,83	< 0.002	0.0001	0.0229
JAN 3,84	DEC 6,83	0.001	0.0001	0.0209

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : GOLDEN LAKE/CUMULATIVE PRECIP.

#17

PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 4,83	730	745	3	46.9	0	24209	2	1	73	
MAR 1,83	FEB 1,83	750	750	3	44.0	0	24224	2	1	U 66	GH
MAR 29,83	MAR 1,83	755	735	2	54.9	0	24229	2	1	79	
APR 26,83	MAR 29,83	735	1345	2	59.3	0	24242	2	1	86	
MAY 24,83	APR 26,83	1345	720	1	126.0	0	24246	2	1	80	AC
JUN 21,83	MAY 24,83	725	710	1	37.0	0	24256	2	1	68	ACD
JUL 19,83	JUN 21,83	715	720	1	56.0	0	24272	2	1	U 65	ADI
AUG 16,83	JUL 19,83	725	635	1	55.0	0	24279	2	1	75	C
SEP 13,83	AUG 16,83	635	1400	1	82.0	0	24289	2	1	84	HCM
OCT 11,83	SEP 13,83	1400	705	1	92.0	0	24296	2	1	15	NHM
NOV 8,83	OCT 11,83	715	2010	3	56.4	0	24302	2	1	82	
DEC 6,83	NOV 8,83	2010	725	3	83.5	0	24308	2	1	85	
JAN 3,84	DEC 6,83	730	645	3	60.8	0	24312	2	1	95	M

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 4,83	1126.0	29.4	4.25	0.0998	1.40	0.68	0.10
MAR 1,83	FEB 1,83	947.0	17.2	4.48	0.0530	1.00	0.28	0.06
MAR 29,83	MAR 1,83	1423.0	24.4	4.39	0.0612	2.05	0.39	0.16
APR 26,83	MAR 29,83	1674.0	12.5	U 6.67	0.0194	2.15	0.33	U 1.39
MAY 24,83	APR 26,83	3301.0	21.6	4.50	0.0560	2.50	0.28	0.30
JUN 21,83	MAY 24,83	827.0	55.5	4.11	0.1246	5.80	0.81	0.49
JUL 19,83	JUN 21,83	1188.0	34.0	4.24	0.0768	4.60	0.37	0.28
AUG 16,83	JUL 19,83	1357.0	44.8	G 4.80	0.0444	1.65	0.20	0.28
SEP 13,83	AUG 16,83	2256.0	47.5	4.22	0.1060	5.10	0.57	0.37
OCT 11,83	SEP 13,83	470.0	*****	4.44	0.0708	3.15	0.46	0.25
NOV 8,83	OCT 11,83	1503.0	16.5	4.50	0.0484	1.65	0.28	0.06
DEC 6,83	NOV 8,83	2312.0	14.0	4.66	0.0436	1.20	0.30	*****
JAN 3,84	DEC 6,83	1882.0	15.7	4.50	0.0470	0.65	0.40	0.05

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : GOLDEN LAKE/CUMULATIVE PRECIP.

#17

PAGE : 2

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 4,83	0.18	0.29	0.015	0.020	0.075	0.142	0.006
MAR 1,83	FEB 1,83	0.07	0.18	0.015	0.010	0.040	0.112	0.006
MAR 29,83	MAR 1,83	0.10	0.23	0.035	0.045	0.125	0.166	0.008
APR 26,83	MAR 29,83	0.15	0.27	U 0.315	0.030	0.100	0.136	<T 0.004
MAY 24,83	APR 26,83	0.09	0.38	0.040	0.040	0.030	0.270	0.011
JUN 21,83	MAY 24,83	0.14	0.95	0.115	0.085	0.040	0.720	0.018
JUL 19,83	JUN 21,83	0.07	0.86	0.065	0.120	0.020	0.730	0.020
AUG 16,83	JUL 19,83	0.11	0.28	0.045	0.090	D 0.045	0.176	0.010
SEP 13,83	AUG 16,83	0.12	0.54	0.050	0.040	0.055	0.510	0.006
OCT 11,83	SEP 13,83	0.06	0.45	0.035	0.030	0.020	0.310	0.010
NOV 8,83	OCT 11,83	0.12	0.20	0.020	0.050	0.055	0.148	0.010
DEC 6,83	NOV 8,83	0.08	0.23	0.020	0.025	0.080	0.222	0.008
JAN 3,84	DEC 6,83	0.09	0.07	0.005	<W 0.005	0.030	0.018	0.006

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 4,83	0.002	< 0.001	0.004	0.024	0.006	< 0.002	0.016
MAR 1,83	FEB 1,83	< 0.001	< 0.001	0.003	0.022	0.010	< 0.002	< 0.010
MAR 29,83	MAR 1,83	0.002	< 0.001	0.003	0.040	0.006	< 0.002	0.055
APR 26,83	MAR 29,83	0.006	< 0.001	0.005	0.073	0.004	< 0.002	0.072
MAY 24,83	APR 26,83	0.003	< 0.001	0.003	0.036	0.003	< 0.002	0.037
JUN 21,83	MAY 24,83	0.008	0.001	0.008	0.035	0.011	< 0.002	0.077
JUL 19,83	JUN 21,83	0.003	< 0.001	0.004	0.034	0.005	< 0.002	0.031
AUG 16,83	JUL 19,83	0.004	< 0.001	0.005	0.059	0.004	< 0.002	0.057
SEP 13,83	AUG 16,83	0.003	< 0.001	0.003	0.037	0.004	< 0.002	0.038
OCT 11,83	SEP 13,83	0.003	< 0.001	0.009	0.115	0.010	< 0.002	0.114
NOV 8,83	OCT 11,83	0.001	< 0.001	0.011	0.011	0.005	< 0.002	0.018
DEC 6,83	NOV 8,83	0.004	< 0.001	0.004	0.009	0.004	< 0.002	0.006
JAN 3,84	DEC 6,83	< 0.001	0.001	0.003	0.011	0.003	< 0.002	0.018

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : GOLDEN LAKE/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 4,83	0.001	< 0.0001	0.0562
MAR 1,83	FEB 1,83	0.002	< 0.0001	0.0331
MAR 29,83	MAR 1,83	0.002	< 0.0001	0.0407
APR 26,83	MAR 29,83	0.001	< 0.0001	U 0.0002
MAY 24,83	APR 26,83	0.003	< 0.0001	0.0316
JUN 21,83	MAY 24,83	0.003	0.0001	0.0776
JUL 19,83	JUN 21,83	0.002	< 0.0001	0.0575
AUG 16,83	JUL 19,83	0.001	0.0002	G 0.0158
SEP 13,83	AUG 16,83	0.001	< 0.0001	0.0603
OCT 11,83	SEP 13,83	0.003	0.0002	0.0363
NOV 8,83	OCT 11,83	< 0.002	< 0.0001	0.0316
DEC 6,83	NOV 8,83	< 0.001	< 0.0001	0.0219
JAN 3,84	DEC 6,83	0.001	< 0.0001	0.0316

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : SMITH'S FALLS/CUMULATIVE PRECIP. #15

PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-HOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 4,83	1630	945	3	47.9	0	24213	2	1	66	
MAR 1,83	FEB 1,83	945	945	3	59.2	0	24222	2	1	81	
MAR 29,83	MAR 1,83	945	945	3	66.7	0	24227	2	1	U 17	GH
APR 26,83	MAR 29,83	945	955	2	70.6	0	24238	2	1	80	
MAY 24,83	APR 26,83	955	1130	1	56.0	0	24248	2	1	126	ACD N
JUN 21,83	MAY 24,83	1130	945	1	29.7	0	24263	2	1	65	ACD
JUL 19,83	JUN 21,83	945	945	1	58.0	0	24274	2	1	76	AD
AUG 16,83	JUL 19,83	945	1300	1	70.7	0	24277	2	1	***	G
SEP 13,83	AUG 16,83	1300	1000	1	19.0	0	24287	2	1	57	A H
OCT 11,83	SEP 13,83	1000	1535	1	70.0	0	24295	2	1	147	NHM
NOV 8,83	OCT 11,83	1535	1040	1	90.2	0	24301	2	1	102	
DEC 6,83	NOV 8,83	1040	1500	3	84.8	0	24305	2	1	U 79	G
JAN 3,84	DEC 6,83	1500	930	3	105.4	0	24310	2	1	75	

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 4,83	1037.0	*****	G 4.92	0.0430	0.65	0.16	0.07
MAR 1,83	FEB 1,83	1558.0	28.5	4.26	0.0778	2.05	0.44	0.10
MAR 29,83	MAR 1,83	385.0	10.4	*****	*****	1.05	0.18	0.18
APR 26,83	MAR 29,83	1849.0	20.8	4.48	0.1516	1.70	0.37	0.24
MAY 24,83	APR 26,83	2297.0	21.4	B 4.75	0.0452	3.80	0.38	0.75
JUN 21,83	MAY 24,83	634.0	37.0	B 4.65	D 0.0536	6.30	G 0.88	B 1.53
JUL 19,83	JUN 21,83	1450.0	48.0	4.11	0.1006	6.55	0.61	0.75
AUG 16,83	JUL 19,83	*****	*****	*****	*****	*****	*****	*****
SEP 13,83	AUG 16,83	355.0	36.4	U 6.92	D 0.0204	U 9.10	0.80	U 2.44
OCT 11,83	SEP 13,83	3363.0	*****	G 4.71	0.0500	2.95	0.35	0.31
NOV 8,83	OCT 11,83	3001.0	13.3	B 4.97	0.0290	1.55	0.34	0.45
DEC 6,83	NOV 8,83	2198.0	15.5	4.76	0.0374	1.85	0.36	0.36
JAN 3,84	DEC 6,83	2587.0	14.7	4.61	0.0392	1.00	0.33	D 0.16

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : SMITH'S FALLS/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 4,83	0.16	0.13	0.020	0.010	0.060	0.126	0.005
MAR 1,83	FEB 1,83	0.15	0.30	0.025	0.020	0.080	0.270	< 0.003
MAR 29,83	MAR 1,83	0.09	0.15	0.040	0.035	0.110	0.130	0.006
APR 26,83	MAR 29,83	0.08	0.24	0.060	0.015	0.045	0.146	< 0.001
MAY 24,83	APR 26,83	0.12	0.57	U 0.230	0.050	0.050	0.510	0.019
JUN 21,83	MAY 24,83	0.21	1.00	U 0.545	0.065	D 0.080	0.700	0.021
JUL 19,83	JUN 21,83	0.13	0.93	U 0.175	0.060	0.030	0.890	0.008
AUG 16,83	JUL 19,83	*****	*****	*****	*****	*****	*****	*****
SEP 13,83	AUG 16,83	0.20	1.04	U 0.850	0.080	0.110	0.830	0.027
OCT 11,83	SEP 13,83	0.04	0.29	D 0.085	< 0.015	0.020	0.256	<W 0.001
NOV 8,83	OCT 11,83	0.11	0.16	D 0.175	0.020	0.050	0.130	0.005
DEC 6,83	NOV 8,83	0.13	0.25	U 0.150	U 0.070	0.115	0.164	< 0.004
JAN 3,84	DEC 6,83	D 0.26	0.10	0.010	<W 0.005	D 0.175	0.042	0.007

REMOVAL DATE	EXPOSURE DATE	MANGANESE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 4,83	< 0.001	< 0.001	0.004	0.016	0.004	< 0.002	0.016
MAR 1,83	FEB 1,83	0.003	0.001	0.007	0.017	0.010	< 0.002	0.012
MAR 29,83	MAR 1,83	0.003	< 0.001	L 0.005	L 0.056	0.006	< 0.002	L 0.077
APR 26,83	MAR 29,83	0.002	< 0.001	0.004	0.036	0.006	< 0.002	0.027
MAY 24,83	APR 26,83	0.006	< 0.001	0.006	0.061	0.003	< 0.002	0.061
JUN 21,83	MAY 24,83	U 0.014	0.002	0.011	0.067	0.012	< 0.002	0.087
JUL 19,83	JUN 21,83	0.007	< 0.001	0.005	0.049	0.006	< 0.002	0.049
AUG 16,83	JUL 19,83	*****	*****	*****	*****	*****	*****	*****
SEP 13,83	AUG 16,83	G 0.015	< 0.001	0.012	0.173	0.009	< 0.002	0.174
OCT 11,83	SEP 13,83	0.005	< 0.001	0.005	0.159	0.007	< 0.002	0.141
NOV 8,83	OCT 11,83	0.003	< 0.001	0.003	0.024	0.004	< 0.002	0.017
DEC 6,83	NOV 8,83	0.004	< 0.001	0.007	0.015	0.005	< 0.002	0.021
JAN 3,84	DEC 6,83	0.002	< 0.001	0.004	0.017	0.007	< 0.002	0.016

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : SMITH'S FALLS/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 4,83	< 0.002	< 0.0001	G 0.0120
MAR 1,83	FEB 1,83	0.001	< 0.0001	0.0550
MAR 29,83	MAR 1,83	L 0.001	0.0001	*****
APR 26,83	MAR 29,83	0.001	< 0.0001	0.0331
MAY 24,83	APR 26,83	0.001	0.0001	B 0.0178
JUN 21,83	MAY 24,83	0.003	0.0001	B 0.0224
JUL 19,83	JUN 21,83	< 0.002	< 0.0001	0.0776
AUG 16,83	JUL 19,83	*****	*****	*****
SEP 13,83	AUG 16,83	0.003	0.0002	U 0.0001
OCT 11,83	SEP 13,83	< 0.001	< 0.0001	G 0.0195
NOV 8,83	OCT 11,83	< 0.001	< 0.0001	B 0.0107
DEC 6,83	NOV 8,83	0.001	0.0002	0.0174
JAN 3,84	DEC 6,83	< 0.001	< 0.0001	0.0245

PART VI

NORTHEASTERN REGION

CUMULATIVE PRECIPITATION CHEMISTRY LISTINGS

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : ATTAWAPISKAT/CUMULATIVE PRECIP.

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PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
JAN 16,83	DEC 16,82	1325	1315	2	*****	*	11503	2	1	***	E
FEB 1,83	JAN 16,83	1315	1310	2	*****	*	11533	2	1	***	E
MAR 3,83	FEB 1,83	1310	1320	2	*****	*	11557	2	1	***	
MAR 31,83	MAR 3,83	1320	1000	4	*****	*	11587	2	1	***	
MAY 24,83	APR 26,83	945	800	4	*****	*	11626	2	1	***	A H
JUN 22,83	MAY 24,83	1300	1315	1	*****	*	11654	2	1	***	CM
JUL 20,83	JUN 22,83	1315	1410	1	*****	*	11685	2	1	***	ABCDG C
AUG 29,83	JUL 20,83	1410	1315	1	*****	*	11694	2	1	***	HCM
SEP 13,83	AUG 29,83	1315	1310	1	*****	*	11711	2	1	***	C
OCT 13,83	SEP 13,83	1310	1245	1	*****	*	11724	2	1	***	HM
NOV 9,83	OCT 13,83	1245	1015	3	*****	*	11739	2	1	***	HC

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
JAN 16,83	DEC 16,82	89.0	*****	*****	*****	*****	*****	*****
FEB 1,83	JAN 16,83	100.0	*****	*****	*****	*****	*****	*****
MAR 3,83	FEB 1,83	158.0	*****	4.91	0.0352	1.55	0.24	*****
MAR 31,83	MAR 3,83	181.0	*****	*****	*****	U 3.65	0.34	*****
MAY 24,83	APR 26,83	742.0	20.4	5.18	0.0338	G 3.95	0.26	0.61
JUN 22,83	MAY 24,83	302.0	18.6	U 7.54	0.0140	1.40	0.10	U 2.04
JUL 20,83	JUN 22,83	2546.0	39.8	U 7.56	0.0368	1.35	0.05	0.46
AUG 29,83	JUL 20,83	2384.0	5.9	U 6.81	0.0154	0.55	0.11	0.31
SEP 13,83	AUG 29,83	922.0	6.1	U 7.06	0.0158	0.10	0.08	0.71
OCT 13,83	SEP 13,83	1560.0	12.5	U 6.93	0.0168	1.05	0.07	0.13
NOV 9,83	OCT 13,83	421.0	11.4	6.31	0.0178	1.45	0.15	0.40

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : ATTAWAPISKAT/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
JAN 16,83	DEC 16,82	*****	*****	*****	*****	*****	*****	*****
FEB 1,83	JAN 16,83	*****	*****	*****	*****	*****	*****	*****
MAR 3,83	FEB 1,83	0.25	0.30	*****	U 0.675	0.695	*****	<W 0.001
MAR 31,83	MAR 3,83	0.21	0.29	*****	*****	*****	0.130	0.012
MAY 24,83	APR 26,83	0.18	1.03	0.135	0.200	0.105	0.830	0.109
JUN 22,83	MAY 24,83	0.44	0.73	G 0.405	0.145	0.200	0.362	0.025
JUL 20,83	JUN 22,83	0.53	U 4.45	0.130	U 1.000	0.420	U 2.000	U 0.505
AUG 29,83	JUL 20,83	0.09	0.29	0.050	0.070	0.045	0.158	0.023
SEP 13,83	AUG 29,83	0.15	0.15	0.135	0.025	0.070	0.110	0.004
OCT 13,83	SEP 13,83	U 2.00	0.32	0.135	0.055	1.000	0.298	< 0.003
NOV 9,83	OCT 13,83	0.52	0.45	0.100	0.100	0.300	0.224	0.032

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
JAN 16,83	DEC 16,82	*****	*****	*****	*****	*****	*****	*****
FEB 1,83	JAN 16,83	*****	*****	*****	*****	*****	*****	*****
MAR 3,83	FEB 1,83	*****	*****	*****	*****	*****	*****	*****
MAR 31,83	MAR 3,83	*****	*****	*****	*****	*****	*****	*****
MAY 24,83	APR 26,83	0.003	< 0.001	0.005	0.044	0.004	< 0.002	0.041
JUN 22,83	MAY 24,83	*****	*****	*****	*****	*****	*****	*****
JUL 20,83	JUN 22,83	0.003	< 0.001	0.010	0.026	< 0.001	< 0.002	0.022
AUG 29,83	JUL 20,83	0.002	< 0.001	< 0.003	0.025	< 0.001	< 0.002	0.018
SEP 13,83	AUG 29,83	0.002	< 0.001	< 0.004	0.030	< 0.001	< 0.002	0.019
OCT 13,83	SEP 13,83	< 0.001	< 0.001	< 0.003	0.008	< 0.001	< 0.002	0.012
NOV 9,83	OCT 13,83	0.002	< 0.001	0.007	0.079	0.004	< 0.002	0.022

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : ATTAWAPISKAT/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
JAN 16,83	DEC 16,82	*****	*****	*****
FEB 1,83	JAN 16,83	*****	*****	*****
MAR 3,83	FEB 1,83	*****	*****	0.0123
MAR 31,83	MAR 3,83	*****	*****	*****
MAY 24,83	APR 26,83	< 0.002	< 0.0001	0.0066
JUN 22,83	MAY 24,83	*****	*****	U 0.0000
JUL 20,83	JUN 22,83	0.002	< 0.0001	U 0.0000
AUG 29,83	JUL 20,83	0.001	< 0.0001	U 0.0002
SEP 13,83	AUG 29,83	< 0.002	< 0.0001	U 0.0001
OCT 13,83	SEP 13,83	< 0.002	< 0.0001	U 0.0001
NOV 9,83	OCT 13,83	0.002	0.0002	0.0005

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : AZURE LAKE/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
AUG 16,83	JUL 24,83	1000	1100	1	50.0	0	11691	2	1	U 86	G
SEP 13,83	AUG 16,83	1100	900	1	42.0	0	11708	2	1	155	N
OCT 14,83	SEP 13,83	900	1100	1	124.0	0	11721	2	1	67	B M
NOV 9,83	OCT 14,83	1100	1200	1	23.0	0	11732	2	1	71	
DEC 6,83	NOV 9,83	1200	1030	3	70.0	0	11746	2	1	78	C
JAN 9,84	DEC 6,83	1030	1030	2	69.6	0	11761	2	1	55	

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
AUG 16,83	JUL 24,83	1404.0	11.6	4.96	0.0362	1.45	0.20	0.13
SEP 13,83	AUG 16,83	2118.0	20.5	4.66	0.0416	2.10	0.36	0.31
OCT 14,83	SEP 13,83	2700.0	15.4	4.64	0.0466	1.65	0.19	0.08
NOV 9,83	OCT 14,83	532.0	23.6	U 7.56	0.0168	3.65	G 0.85	U 3.35
DEC 6,83	NOV 9,83	1777.0	16.5	4.84	0.0396	2.55	0.46	U 0.83
JAN 9,84	DEC 6,83	1248.0	11.2	4.71	0.0340	0.45	0.23	0.03

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : AZURE LAKE/CUMULATIVE PRECIP.

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PAGE : 2

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
AUG 16,83	JUL 24,83	0.11	0.46	0.020	0.075	0.040	0.388	0.007
SEP 13,83	AUG 16,83	0.12	0.33	0.025	0.035	0.075	0.308	< 0.001
OCT 14,83	SEP 13,83	<W 0.01	0.15	0.010	0.020	0.015	0.156	0.006
NOV 9,83	OCT 14,83	0.21	0.50	U 0.625	U 1.080	0.135	0.284	U 0.420
DEC 6,83	NOV 9,83	0.13	0.32	G 0.125	B 0.195	0.045	0.248	B 0.085
JAN 9,84	DEC 6,83	0.03	< 0.02	0.010	< 0.005	0.025	0.014	< 0.002

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
AUG 16,83	JUL 24,83	0.003	< 0.001	0.003	0.046	0.002	< 0.002	0.027
SEP 13,83	AUG 16,83	0.004	< 0.001	0.004	0.040	0.002	< 0.002	D 0.042
OCT 14,83	SEP 13,83	0.003	< 0.001	< 0.003	0.012	0.001	< 0.002	0.015
NOV 9,83	OCT 14,83	U 0.250	< 0.001	G 0.034	U 0.404	0.006	< 0.002	U 0.555
DEC 6,83	NOV 9,83	U 0.043	< 0.001	0.007	0.035	0.004	< 0.002	0.086
JAN 9,84	DEC 6,83	< 0.001	< 0.001	< 0.004	0.019	0.001	< 0.002	0.018

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : AZURE LAKE/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
AUG 16,83	JUL 24,83	0.002	< 0.0001	0.0110
SEP 13,83	AUG 16,83	0.001	< 0.0001	0.0219
OCT 14,83	SEP 13,83	< 0.001	< 0.0001	0.0229
NOV 9,83	OCT 14,83	G 0.012	0.0002	U 0.0000
DEC 6,83	NOV 9,83	0.001	< 0.0001	0.0145
JAN 9,84	DEC 6,83	< 0.002	< 0.0001	0.0195

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : BEAR ISLAND/CUMULATIVE PRECIP.

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PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-HOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 4,83	1528	1604	4	33.1	0	11525	2	1	U 75	G
MAR 2,83	FEB 1,83	1604	1343	4	32.7	0	11549	2	1	95	
MAR 29,83	MAR 2,83	1343	1700	4	65.9	0	11582	2	1	U 89	G
APR 26,83	MAR 29,83	1700	1645	1	8.6	0	11612	2	1	480	A N
MAY 24,83	APR 26,83	1645	1640	1	8.9	0	11634	2	1	***	A N
JUN 21,83	MAY 24,83	1650	1725	1	30.0	0	11662	2	1	150	AC N
JUL 19,83	JUN 21,83	1725	1700	1	50.0	0	11681	2	1	108	
AUG 22,83	JUL 19,83	1700	1140	1	*****	*	11690	2	1	***	A
SEP 14,83	AUG 22,83	1140	1650	1	*****	*	11707	2	1	***	
OCT 12,83	SEP 14,83	1650	1628	1	*****	*	11720	2	1	***	
NOV 8,83	OCT 12,83	1628	915	1	10.5	0	11736	2	1	174	ABCD NHCM
DEC 6,83	NOV 8,83	915	920	3	47.6	0	11751	2	1	72	
JAN 3,84	DEC 6,83	920	1615	3	49.9	0	11766	2	1	72	

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 4,83	814.0	34.0	4.02	0.1216	2.05	0.63	0.08
MAR 2,83	FEB 1,83	1015.0	41.0	4.02	0.1246	2.85	0.73	0.13
MAR 29,83	MAR 2,83	1925.0	22.8	4.40	0.0596	1.90	0.35	0.17
APR 26,83	MAR 29,83	1341.0	33.6	4.27	0.0892	3.20	0.32	0.10
MAY 24,83	APR 26,83	3484.0	27.7	4.31	0.0830	2.35	0.31	0.14
JUN 21,83	MAY 24,83	1464.0	31.2	4.32	0.0774	4.05	0.29	0.15
JUL 19,83	JUN 21,83	1756.0	27.0	4.51	0.0610	3.75	0.30	0.27
AUG 22,83	JUL 19,83	1904.0	25.7	4.54	0.0618	3.65	0.29	0.20
SEP 14,83	AUG 22,83	260.0	43.5	4.17	0.0896	5.95	0.54	0.73
OCT 12,83	SEP 14,83	2420.0	20.1	4.50	0.0566	2.35	0.36	0.16
NOV 8,83	OCT 12,83	595.0	19.5	U 7.10	0.0250	3.10	0.48	D 0.50
DEC 6,83	NOV 8,83	1115.0	40.0	4.10	0.0986	3.70	0.72	0.19
JAN 3,84	DEC 6,83	1173.0	19.2	4.42	0.0508	0.80	0.43	0.05

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : BEAR ISLAND/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 4,83	0.12	0.25	<W 0.005	0.025	0.050	0.194	0.007
MAR 2,83	FEB 1,83	0.20	0.36	0.015	0.020	0.085	0.364	< 0.002
MAR 29,83	MAR 2,83	0.10	0.22	0.020	0.030	0.050	0.128	0.015
APR 26,83	MAR 29,83	0.06	0.26	0.020	0.020	0.030	0.260	< 0.002
MAY 24,83	APR 26,83	0.06	0.31	0.030	0.030	0.015	0.120	0.006
JUN 21,83	MAY 24,83	0.08	0.78	0.035	0.065	0.040	0.490	0.037
JUL 19,83	JUN 21,83	0.11	0.76	0.045	0.230	0.105	0.620	0.039
AUG 22,83	JUL 19,83	0.09	0.84	0.035	0.125	0.045	0.680	0.048
SEP 14,83	AUG 22,83	0.14	0.65	0.090	D 0.175	0.110	0.490	0.012
OCT 12,83	SEP 14,83	<W 0.01	0.31	0.020	0.185	0.080	0.246	0.032
NOV 8,83	OCT 12,83	0.18	U 2.00	U 0.240	U 0.905	0.120	0.116	U 0.295
DEC 6,83	NOV 8,83	G 0.40	1.12	0.050	G 0.295	U 0.210	0.370	G 0.061
JAN 3,84	DEC 6,83	0.08	< 0.03	0.010	< 0.005	0.035	0.028	< 0.003

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 4,83	0.002	< 0.001	0.006	0.039	0.013	< 0.002	0.035
MAR 2,83	FEB 1,83	0.002	< 0.001	0.008	U 0.325	0.006	< 0.002	0.039
MAR 29,83	MAR 2,83	0.002	< 0.001	0.004	0.024	0.004	< 0.002	0.038
APR 26,83	MAR 29,83	0.001	< 0.001	0.005	0.036	0.003	< 0.002	0.027
MAY 24,83	APR 26,83	0.002	< 0.001	0.003	0.020	0.004	< 0.002	0.021
JUN 21,83	MAY 24,83	0.004	< 0.001	0.012	0.015	G 0.018	< 0.002	0.020
JUL 19,83	JUN 21,83	0.004	< 0.001	0.006	0.054	0.004	< 0.002	0.033
AUG 22,83	JUL 19,83	0.005	< 0.001	0.006	0.039	0.003	< 0.002	0.028
SEP 14,83	AUG 22,83	0.008	< 0.001	0.011	0.089	0.016	< 0.002	0.122
OCT 12,83	SEP 14,83	0.003	< 0.001	0.003	0.032	0.003	< 0.002	0.036
NOV 8,83	OCT 12,83	0.005	< 0.001	G 0.034	L 0.040	0.006	< 0.002	L 0.049
DEC 6,83	NOV 8,83	0.004	0.002	0.027	0.055	0.015	< 0.002	0.056
JAN 3,84	DEC 6,83	< 0.001	< 0.001	0.003	0.012	0.003	< 0.002	0.020

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : BEAR ISLAND/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 4,83	0.002	0.0002	0.0955
MAR 2,83	FEB 1,83	0.001	0.0002	0.0955
MAR 29,83	MAR 2,83	< 0.002	< 0.0001	0.0398
APR 26,83	MAR 29,83	0.001	< 0.0001	0.0537
MAY 24,83	APR 26,83	0.001	< 0.0001	0.0490
JUN 21,83	MAY 24,83	0.001	0.0003	0.0479
JUL 19,83	JUN 21,83	0.002	< 0.0001	0.0309
AUG 22,83	JUL 19,83	0.003	0.0002	0.0288
SEP 14,83	AUG 22,83	0.004	0.0001	0.0676
OCT 12,83	SEP 14,83	0.001	< 0.0001	0.0316
NOV 8,83	OCT 12,83	G 0.011	0.0003	U 0.0001
DEC 6,83	NOV 8,83	0.006	0.0008	0.0794
JAN 3,84	DEC 6,83	< 0.002	< 0.0001	0.0380

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : GOWGANDA/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-HOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 4,83	845	1030	3	48.8	0	11529	2	1	52	
MAR 1,83	FEB 1,83	1030	1200	4	29.4	0	11553	2	1	99	
MAR 29,83	MAR 1,83	1200	1118	4	54.4	0	11580	2	1	U 115	G
APR 26,83	MAR 29,83	1118	1030	4	38.9	0	11614	2	1	U 73	G CM
MAY 24,83	APR 26,83	1030	1030	1	72.0	0	11630	2	1	U 7	G
JUN 21,83	MAY 24,83	1045	1245	1	30.0	0	11658	2	1	184	AD N
JUL 19,83	JUN 21,83	1245	1145	1	48.0	0	11683	2	1	59	
AUG 16,83	JUL 19,83	1145	1040	1	136.0	0	11692	2	1	U 85	G HC
SEP 13,83	AUG 16,83	1040	1230	1	68.0	0	11709	2	1	83	HC
OCT 11,83	SEP 13,83	1230	1850	1	105.0	0	11722	2	1	U 76	BG C
NOV 8,83	OCT 11,83	1850	1315	1	*****	*	11737	2	1	***	
DEC 6,83	NOV 8,83	1315	1115	2	38.5	0	11752	2	1	93	
JAN 3,84	DEC 6,83	1115	1300	3	44.1	0	11767	2	1	43	N

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 4,83	831.0	32.0	4.04	0.1110	1.65	0.66	0.08
MAR 1,83	FEB 1,83	948.0	37.0	4.10	0.1052	2.15	0.75	0.09
MAR 29,83	MAR 1,83	2033.0	11.5	4.75	0.0344	0.90	0.15	0.08
APR 26,83	MAR 29,83	926.0	21.5	4.48	0.0648	1.95	0.14	0.06
MAY 24,83	APR 26,83	164.0	*****	*****	*****	*****	*****	*****
JUN 21,83	MAY 24,83	1793.0	23.9	4.58	0.0526	3.95	0.28	0.47
JUL 19,83	JUN 21,83	920.0	34.5	4.29	0.0812	4.50	0.40	0.34
AUG 16,83	JUL 19,83	3766.0	10.6	4.98	0.0324	0.80	0.09	0.07
SEP 13,83	AUG 16,83	1852.0	15.2	4.84	0.0356	1.75	0.20	0.17
OCT 11,83	SEP 13,83	2604.0	10.0	4.98	0.0306	1.10	0.13	0.09
NOV 8,83	OCT 11,83	804.0	25.3	4.28	0.0766	3.25	0.37	0.22
DEC 6,83	NOV 8,83	1175.0	29.9	4.16	0.0890	2.30	0.47	0.08
JAN 3,84	DEC 6,83	623.0	14.5	4.49	0.0502	0.85	0.25	0.05

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : GOWGANDA/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 4,83	0.10	0.25	<W 0.005	0.025	0.035	0.178	0.006
MAR 1,83	FEB 1,83	0.16	0.32	0.015	0.030	0.040	0.300	< 0.002
MAR 29,83	MAR 1,83	0.08	0.14	0.010	0.040	0.040	0.056	0.010
APR 26,83	MAR 29,83	0.04	0.12	0.015	0.015	0.015	0.050	< 0.003
MAY 24,83	APR 26,83	*****	*****	*****	*****	*****	*****	*****
JUN 21,83	MAY 24,83	0.07	D 0.94	0.105	U 0.500	0.020	0.390	0.094
JUL 19,83	JUN 21,83	0.13	0.84	0.060	0.155	0.105	0.700	0.018
AUG 16,83	JUL 19,83	0.38	0.26	0.010	0.025	0.240	0.200	0.019
SEP 13,83	AUG 16,83	0.07	0.32	0.020	0.035	0.030	0.254	0.004
OCT 11,83	SEP 13,83	<W 0.01	0.18	0.015	0.025	< 0.010	0.164	0.007
NOV 8,83	OCT 11,83	0.16	0.32	0.030	0.080	0.090	0.234	0.006
DEC 6,83	NOV 8,83	0.12	0.21	0.015	0.025	0.055	0.136	0.006
JAN 3,84	DEC 6,83	0.06	0.07	0.010	< 0.005	0.050	< 0.002	< 0.004

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 4,83	0.001	0.001	0.007	0.046	0.008	< 0.002	0.025
MAR 1,83	FEB 1,83	0.002	0.001	0.007	U 0.314	0.005	< 0.002	0.032
MAR 29,83	MAR 1,83	< 0.001	< 0.001	0.004	0.018	0.003	< 0.002	0.017
APR 26,83	MAR 29,83	0.001	U 0.029	0.010	0.037	< 0.001	< 0.002	0.033
MAY 24,83	APR 26,83	*****	*****	*****	*****	*****	*****	*****
JUN 21,83	MAY 24,83	0.009	0.001	B 0.029	0.026	0.006	< 0.002	D 0.036
JUL 19,83	JUN 21,83	0.006	< 0.001	0.008	G 0.124	0.007	< 0.002	0.117
AUG 16,83	JUL 19,83	0.001	< 0.001	< 0.003	0.011	0.003	< 0.002	0.010
SEP 13,83	AUG 16,83	0.002	< 0.001	0.003	0.022	0.002	< 0.002	0.020
OCT 11,83	SEP 13,83	0.001	< 0.001	0.003	0.035	0.004	< 0.002	0.049
NOV 8,83	OCT 11,83	0.002	0.003	G 0.038	L 0.032	0.010	< 0.002	L 0.039
DEC 6,83	NOV 8,83	0.001	< 0.001	0.007	0.025	D 0.009	< 0.002	0.044
JAN 3,84	DEC 6,83	0.001	< 0.001	0.005	0.011	0.004	< 0.002	0.018

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : GOWGANDA/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 4,83	0.002	0.0002	0.0912
MAR 1,83	FEB 1,83	0.002	0.0001	0.0794
MAR 29,83	MAR 1,83	0.001	< 0.0001	0.0178
APR 26,83	MAR 29,83	0.005	< 0.0001	0.0331
MAY 24,83	APR 26,83	*****	*****	*****
JUN 21,83	MAY 24,83	U 0.020	0.0002	0.0263
JUL 19,83	JUN 21,83	< 0.002	0.0001	0.0513
AUG 16,83	JUL 19,83	0.001	< 0.0001	0.0105
SEP 13,83	AUG 16,83	< 0.002	< 0.0001	0.0145
OCT 11,83	SEP 13,83	0.001	< 0.0001	0.0105
NOV 8,83	OCT 11,83	U 0.019	U 0.0019	0.0525
DEC 6,83	NOV 8,83	0.001	0.0003	0.0692
JAN 3,84	DEC 6,83	< 0.003	0.0002	0.0324

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : KILLARNEY/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 5,83	1025	1300	4	42.4	0	11521	2	1	U 89	G
MAR 1,83	FEB 1,83	1300	930	4	36.8	0	11545	2	1	72	
MAR 29,83	MAR 1,83	930	1010	4	84.4	0	11584	2	1	61	
APR 26,83	MAR 29,83	1010	1340	1	55.8	9	11595	2	1	102	
MAY 25,83	APR 26,83	1340	1700	1	153.0	0	11638	2	1	U 61	GA
JUN 21,83	MAY 25,83	1700	1100	1	70.0	0	11666	2	1	69	
JUL 19,83	JUN 21,83	1100	800	1	32.0	0	11679	2	1	52	
AUG 16,83	JUL 19,83	800	850	1	83.0	0	11688	2	1	***	FE
SEP 13,83	AUG 16,83	850	820	1	68.0	0	11705	2	1	63	
OCT 11,83	SEP 13,83	820	1650	1	157.0	0	11718	2	1	79	
NOV 8,83	OCT 11,83	1650	800	1	14.9	0	11734	2	1	287	N
DEC 6,83	NOV 8,83	800	820	3	51.4	0	11749	2	1	93	
JAN 3,84	DEC 6,83	820	1600	2	77.9	0	11764	2	1	83	

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 5,83	1231.0	41.5	3.96	0.1356	3.00	0.87	0.07
MAR 1,83	FEB 1,83	868.0	G 59.0	3.88	0.1616	4.05	G 1.12	*****
MAR 29,83	MAR 1,83	1676.0	35.2	4.22	0.0848	3.20	0.66	0.27
APR 26,83	MAR 29,83	1853.0	39.9	4.15	B 0.2240	3.45	0.48	0.20
MAY 25,83	APR 26,83	3065.0	33.3	4.26	0.0824	3.15	0.44	0.22
JUN 21,83	MAY 25,83	1579.0	44.5	4.25	0.0964	5.15	D 0.64	0.35
JUL 19,83	JUN 21,83	541.0	59.0	4.06	0.1384	6.50	0.62	0.34
AUG 16,83	JUL 19,83	*****	*****	*****	*****	*****	*****	*****
SEP 13,83	AUG 16,83	1397.0	24.0	4.52	0.0502	2.80	0.28	0.37
OCT 11,83	SEP 13,83	4043.0	*****	4.55	0.0506	2.25	0.29	0.20
NOV 8,83	OCT 11,83	1393.0	27.9	4.22	0.0830	2.65	0.53	0.16
DEC 6,83	NOV 8,83	1561.0	36.5	4.10	0.0998	3.25	0.72	0.24
JAN 3,84	DEC 6,83	2115.0	24.3	4.31	0.0628	1.50	0.51	0.09

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : KILLARNEY/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 5,83	0.16	0.60	0.050	0.025	0.035	0.550	0.011
MAR 1,83	FEB 1,83	0.25	0.62	*****	0.020	U 0.550	0.620	< 0.001
MAR 29,83	MAR 1,83	0.14	0.55	0.030	0.040	0.060	D 0.460	0.013
APR 26,83	MAR 29,83	0.11	0.27	0.030	0.025	0.035	0.286	0.005
MAY 25,83	APR 26,83	0.09	0.45	0.045	0.040	0.020	0.370	0.008
JUN 21,83	MAY 25,83	0.14	1.71	0.070	0.065	0.025	0.730	0.057
JUL 19,83	JUN 21,83	0.15	0.69	0.060	0.160	0.030	0.620	0.012
AUG 16,83	JUL 19,83	*****	*****	*****	*****	*****	*****	*****
SEP 13,83	AUG 16,83	0.08	0.35	0.040	0.050	0.070	0.314	0.004
OCT 11,83	SEP 13,83	<W 0.01	0.29	0.030	0.025	< 0.010	0.266	0.006
NOV 8,83	OCT 11,83	0.13	0.25	0.010	0.065	0.080	0.188	0.012
DEC 6,83	NOV 8,83	0.19	0.40	0.030	0.050	0.080	0.356	0.006
JAN 3,84	DEC 6,83	0.09	0.19	0.030	< 0.015	0.055	0.142	0.007

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 5,83	0.001	< 0.001	0.009	0.020	0.008	< 0.002	0.022
MAR 1,83	FEB 1,83	0.002	0.002	0.015	0.064	0.014	< 0.002	0.045
MAR 29,83	MAR 1,83	0.004	0.001	0.006	D 0.046	0.006	< 0.002	D 0.062
APR 26,83	MAR 29,83	0.002	< 0.001	0.007	0.032	0.007	< 0.002	0.045
MAY 25,83	APR 26,83	0.002	< 0.001	0.011	0.039	< 0.001	< 0.002	0.034
JUN 21,83	MAY 25,83	0.005	< 0.001	0.008	0.047	0.005	< 0.002	0.038
JUL 19,83	JUN 21,83	0.004	< 0.001	0.008	0.034	0.007	< 0.002	0.039
AUG 16,83	JUL 19,83	*****	*****	*****	*****	*****	*****	*****
SEP 13,83	AUG 16,83	0.003	< 0.001	0.007	0.042	0.004	< 0.002	0.040
OCT 11,83	SEP 13,83	0.002	< 0.001	0.004	0.051	0.004	< 0.002	0.062
NOV 8,83	OCT 11,83	0.001	< 0.001	L 0.004	L 0.012	0.005	< 0.002	L 0.015
DEC 6,83	NOV 8,83	0.004	< 0.001	0.013	0.062	0.008	< 0.002	0.038
JAN 3,84	DEC 6,83	< 0.001	0.001	0.008	0.012	0.006	< 0.002	0.020

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : KILLARNEY/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 5,83	0.001	0.0002	0.1096
MAR 1,83	FEB 1,83	0.003	0.0004	0.1318
MAR 29,83	MAR 1,83	< 0.002	< 0.0001	0.0603
APR 26,83	MAR 29,83	< 0.002	< 0.0001	0.0708
MAY 25,83	APR 26,83	0.001	< 0.0001	0.0550
JUN 21,83	MAY 25,83	< 0.002	0.0001	0.0562
JUL 19,83	JUN 21,83	0.005	0.0001	0.0871
AUG 16,83	JUL 19,83	*****	*****	*****
SEP 13,83	AUG 16,83	0.002	0.0001	0.0302
OCT 11,83	SEP 13,83	< 0.001	< 0.0001	0.0282
NOV 8,83	OCT 11,83	L< 0.001	< 0.0001	0.0603
DEC 6,83	NOV 8,83	0.002	0.0001	0.0794
JAN 3,84	DEC 6,83	0.002	0.0002	0.0490

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MATTAWA/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(HM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 4,83	1600	1120	4	40.8	0	11523	2	1	U 26	G
MAR 1,83	FEB 1,83	1120	745	4	33.0	0	11547	2	1	96	
MAR 29,83	MAR 1,83	745	740	4	70.8	0	11583	2	1	76	
APR 25,83	MAR 29,83	740	2000	1	41.1	0	11596	2	1	92	
MAY 24,83	APR 26,83	745	1900	1	132.0	0	11636	2	1	81	AD
JUN 22,83	MAY 24,83	1900	830	1	76.0	0	11664	2	1	78	D
JUL 19,83	JUN 22,83	830	830	1	28.0	0	11680	2	1	94	C
AUG 18,83	JUL 19,83	830	820	1	94.0	0	11689	2	1	84	
SEP 13,83	AUG 18,83	820	1130	1	72.0	0	11706	2	1	78	
OCT 11,83	SEP 13,83	1130	1530	1	162.0	0	11719	2	1	83	
NOV 8,83	OCT 11,83	1530	1615	3	71.7	0	11735	2	1	86	
DEC 6,83	NOV 8,83	1615	745	3	63.0	0	11750	2	1	73	
JAN 4,84	DEC 6,83	745	1420	3	65.4	0	11765	2	1	U 67	F

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 4,83	347.0	*****	*****	*****	*****	*****	*****
MAR 1,83	FEB 1,83	1029.0	23.4	4.30	0.0730	1.25	0.34	0.06
MAR 29,83	MAR 1,83	1757.0	20.1	4.47	0.0568	1.65	0.31	0.14
APR 25,83	MAR 29,83	1229.0	31.2	4.29	0.0814	2.80	0.32	0.16
MAY 24,83	APR 26,83	3500.0	22.9	4.45	D 0.0606	2.15	0.25	0.13
JUN 22,83	MAY 24,83	1935.0	27.1	4.31	0.0814	3.05	0.30	0.24
JUL 19,83	JUN 22,83	857.0	39.5	4.30	0.0900	5.20	0.43	0.49
AUG 18,83	JUL 19,83	2592.0	35.0	4.30	0.0912	3.85	0.34	0.19
SEP 13,83	AUG 18,83	1829.0	28.3	4.38	0.0652	3.15	0.25	0.23
OCT 11,83	SEP 13,83	4375.0	31.2	U 7.45	0.0288	3.70	0.26	U 1.69
NOV 8,83	OCT 11,83	2003.0	14.8	4.63	0.0422	1.50	0.22	0.14
DEC 6,83	NOV 8,83	1502.0	19.3	4.39	D 0.0608	1.80	0.33	0.06
JAN 4,84	DEC 6,83	1433.0	20.7	4.41	0.0522	0.90	0.47	0.05

ONTARIO MINISTRY OF THE ENVIRONMENT
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APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MATTAWA/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 4,83	*****	*****	*****	*****	*****	*****	*****
MAR 1,83	FEB 1,83	0.10	0.09	< 0.005	0.010	0.035	0.096	<W 0.001
MAR 29,83	MAR 1,83	0.08	0.26	0.020	0.030	0.040	0.112	0.012
APR 25,83	MAR 29,83	0.11	0.34	0.030	0.030	0.050	0.152	0.010
MAY 24,83	APR 26,83	0.05	0.28	0.025	0.030	0.015	0.210	0.010
JUN 22,83	MAY 24,83	0.06	0.59	0.050	0.025	< 0.010	0.276	0.037
JUL 19,83	JUN 22,83	0.24	1.09	0.065	0.075	0.045	0.790	0.031
AUG 18,83	JUL 19,83	0.09	0.41	0.025	0.045	0.025	0.378	0.007
SEP 13,83	AUG 18,83	0.09	0.30	0.020	0.055	0.100	0.274	< 0.002
OCT 11,83	SEP 13,83	*****	U 3.40	U 0.160	U 1.070	U 2.400	0.114	0.100
NOV 8,83	OCT 11,83	0.08	0.22	0.010	0.045	0.045	0.150	0.015
DEC 6,83	NOV 8,83	0.10	0.25	0.010	< 0.015	0.060	0.162	0.013
JAN 4,84	DEC 6,83	0.13	0.17	0.010	<W 0.005	0.055	0.084	0.007

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 4,83	*****	*****	*****	*****	*****	*****	*****
MAR 1,83	FEB 1,83	0.001	< 0.001	0.004	0.014	0.004	< 0.002	0.017
MAR 29,83	MAR 1,83	0.002	< 0.001	0.003	0.024	0.002	< 0.002	0.039
APR 25,83	MAR 29,83	0.002	< 0.001	0.005	0.039	0.005	< 0.002	0.047
MAY 24,83	APR 26,83	0.002	< 0.001	0.002	0.065	< 0.001	< 0.002	0.049
JUN 22,83	MAY 24,83	0.006	< 0.001	0.007	0.141	0.004	< 0.002	0.112
JUL 19,83	JUN 22,83	0.007	< 0.001	0.005	0.128	0.006	< 0.002	0.112
AUG 18,83	JUL 19,83	0.003	< 0.001	0.004	0.044	0.005	< 0.002	0.033
SEP 13,83	AUG 18,83	0.002	< 0.001	0.003	0.061	0.002	< 0.002	0.057
OCT 11,83	SEP 13,83	G 0.014	0.009	U 0.151	U 0.225	0.016	< 0.002	0.176
NOV 8,83	OCT 11,83	0.003	< 0.001	L 0.002	L 0.030	0.004	< 0.002	L 0.028
DEC 6,83	NOV 8,83	0.002	< 0.001	0.003	0.039	0.004	< 0.002	0.031
JAN 4,84	DEC 6,83	0.001	< 0.001	0.004	D 0.028	0.006	< 0.002	D 0.025

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MATTANA/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 4,83	*****	*****	*****
MAR 1,83	FEB 1,83	0.003	< 0.0001	0.0501
MAR 29,83	MAR 1,83	0.004	< 0.0001	0.0339
APR 25,83	MAR 29,83	0.002	< 0.0001	0.0513
MAY 24,83	APR 26,83	0.001	0.0001	0.0355
JUN 22,83	MAY 24,83	< 0.002	< 0.0001	0.0490
JUL 19,83	JUN 22,83	0.002	0.0001	0.0501
AUG 18,83	JUL 19,83	0.002	0.0002	0.0501
SEP 13,83	AUG 18,83	< 0.002	< 0.0001	0.0417
OCT 11,83	SEP 13,83	U 0.049	U 0.0045	U 0.0000
NOV 8,83	OCT 11,83	L< 0.001	< 0.0001	0.0234
DEC 6,83	NOV 8,83	0.001	< 0.0001	0.0407
JAN 4,84	DEC 6,83	< 0.002	< 0.0001	0.0389

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MCKELLAR/CUMULATIVE PRECIP.

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PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(INH)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-HOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 4,83	800	800	4	82.6	0	11527	2	1	U 83	GD
MAR 1,83	FEB 1,83	800	800	3	61.1	0	11543	2	1	U 7	G
MAR 29,83	MAR 1,83	800	800	3	60.2	9	11585	2	1	U 80	DF
APR 26,83	MAR 29,83	800	800	1	69.8	9	11594	2	1	U 83	F
MAY 24,83	APR 26,83	800	800	1	180.0	0	11640	2	1	66	AD
JUN 21,83	MAY 24,83	800	800	1	70.0	0	11668	2	1	72	AD
JUL 19,83	JUN 21,83	800	800	1	30.0	0	11678	2	1	89	
AUG 16,83	JUL 19,83	800	800	1	30.0	0	11687	2	1	58	
SEP 13,83	AUG 16,83	800	800	1	60.0	0	11704	2	1	72	AC
OCT 11,83	SEP 13,83	800	1500	1	178.0	0	11717	2	1	U 47	M
NOV 8,83	OCT 11,83	1500	830	1	53.4	9	11733	2	1	93	C
DEC 9,83	NOV 8,83	830	810	3	111.2	9	11747	2	1	48	NM
JAN 3,84	DEC 9,83	810	1330	3	125.0	0	11762	2	1	U 51	F

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 4,83	2247.0	22.6	4.25	0.0818	1.20	0.41	0.06
MAR 1,83	FEB 1,83	150.0	*****	G 4.85	0.0374	1.50	0.17	*****
MAR 29,83	MAR 1,83	1574.0	31.8	4.32	0.0730	2.75	0.63	0.28
APR 26,83	MAR 29,83	1886.0	36.1	4.19	0.0926	3.15	0.41	0.18
MAY 24,83	APR 26,83	3876.0	36.8	4.30	0.0884	3.60	0.49	0.29
JUN 21,83	MAY 24,83	1659.0	49.4	4.11	0.1132	5.75	0.66	0.52
JUL 19,83	JUN 21,83	872.0	67.0	4.03	0.1456	G 8.40	0.81	0.71
AUG 16,83	JUL 19,83	568.0	42.3	4.30	0.1016	5.50	0.58	0.36
SEP 13,83	AUG 16,83	1414.0	37.8	4.16	0.0802	4.20	0.55	0.47
OCT 11,83	SEP 13,83	2731.0	*****	4.56	0.0558	2.45	0.30	0.21
NOV 8,83	OCT 11,83	1627.0	15.2	4.37	0.0664	2.50	0.50	0.19
DEC 9,83	NOV 8,83	1763.0	10.7	4.77	0.0338	0.75	0.22	< 0.02
JAN 3,84	DEC 9,83	2100.0	23.3	4.36	0.0590	D 1.50	0.44	0.06

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MCKELLAR/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 4,83	0.35	0.21	<W 0.005	0.030	0.215	0.180	0.006
MAR 1,83	FEB 1,83	U 0.53	0.50	*****	*****	*****	*****	0.008
MAR 29,83	MAR 1,83	0.20	0.51	0.030	0.040	0.110	0.352	0.011
APR 26,83	MAR 29,83	0.12	0.30	0.030	0.025	0.055	0.198	0.008
MAY 24,83	APR 26,83	0.10	0.46	0.050	0.050	0.035	0.380	0.019
JUN 21,83	MAY 24,83	0.18	0.86	0.105	0.060	0.050	0.660	0.019
JUL 19,83	JUN 21,83	0.19	1.01	0.110	0.090	0.035	G 1.050	0.012
AUG 16,83	JUL 19,83	0.12	1.09	0.085	0.070	0.020	0.880	0.014
SEP 13,83	AUG 16,83	0.11	0.49	0.075	0.050	0.070	0.460	0.012
OCT 11,83	SEP 13,83	<W 0.01	0.27	0.045	0.030	0.025	0.232	< 0.003
NOV 8,83	OCT 11,83	0.13	0.46	0.025	0.055	0.065	0.410	0.007
DEC 9,83	NOV 8,83	0.09	0.18	0.005	< 0.010	0.025	0.124	0.006
JAN 3,84	DEC 9,83	0.16	0.16	0.015	< 0.005	0.080	0.142	0.007

REMOVAL DATE	EXPOSURE DATE	MANGANESE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 4,83	< 0.001	< 0.002	0.005	0.017	0.005	< 0.002	0.008
MAR 1,83	FEB 1,83	*****	*****	*****	*****	*****	*****	*****
MAR 29,83	MAR 1,83	0.003	< 0.001	0.007	0.029	0.004	< 0.002	0.044
APR 26,83	MAR 29,83	0.002	< 0.001	0.004	0.022	0.004	< 0.002	0.029
MAY 24,83	APR 26,83	0.004	< 0.001	0.004	0.043	0.005	< 0.002	0.041
JUN 21,83	MAY 24,83	0.007	< 0.001	0.010	0.064	0.006	< 0.002	0.052
JUL 19,83	JUN 21,83	0.007	< 0.001	0.008	0.069	0.008	< 0.002	0.082
AUG 16,83	JUL 19,83	0.006	< 0.001	0.010	D 0.125	D 0.010	< 0.002	0.085
SEP 13,83	AUG 16,83	0.004	< 0.001	0.007	0.039	0.004	< 0.002	0.038
OCT 11,83	SEP 13,83	0.002	< 0.001	0.003	0.075	0.004	< 0.002	0.074
NOV 8,83	OCT 11,83	0.002	0.002	L 0.013	L 0.023	0.008	< 0.002	L 0.017
DEC 9,83	NOV 8,83	< 0.001	< 0.001	0.003	0.011	0.003	< 0.002	0.011
JAN 3,84	DEC 9,83	< 0.001	< 0.001	0.004	0.027	0.005	< 0.002	0.017

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MCKELLAR/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 4,83	0.001	0.0002	0.0562
MAR 1,83	FEB 1,83	*****	*****	G 0.0141
MAR 29,83	MAR 1,83	< 0.002	< 0.0001	0.0479
APR 26,83	MAR 29,83	< 0.002	< 0.0001	0.0646
MAY 24,83	APR 26,83	0.003	< 0.0001	0.0501
JUN 21,83	MAY 24,83	< 0.002	0.0001	0.0776
JUL 19,83	JUN 21,83	0.002	< 0.0001	0.0933
AUG 16,83	JUL 19,83	0.003	< 0.0001	0.0501
SEP 13,83	AUG 16,83	0.002	< 0.0001	0.0692
OCT 11,83	SEP 13,83	< 0.001	< 0.0001	0.0275
NOV 8,83	OCT 11,83	L 0.002	0.0002	0.0427
DEC 9,83	NOV 8,83	< 0.002	< 0.0001	0.0170
JAN 3,84	DEC 9,83	< 0.001	0.0001	0.0437

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MOONBEAM/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-HOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 6,83	1000	800	2	20.5	0	11531	2	1	U 52	G
MAR 1,83	FEB 1,83	800	1245	4	37.1	0	11555	2	1	48	N
MAR 29,83	MAR 1,83	1245	900	4	1.7	0	11579	2	1	U 521	F
APR 26,83	MAR 29,83	900	900	4	42.1	0	11610	2	1	63	
MAY 24,83	APR 26,83	900	1100	4	65.0	0	11628	2	1	58	A
JUN 21,83	MAY 24,83	1100	1500	1	76.0	0	11656	2	1	49	N
JUL 19,83	JUN 21,83	1500	1405	1	49.0	0	11684	2	1	79	
AUG 16,83	JUL 19,83	1405	945	1	50.0	0	11693	2	1	113	H
SEP 13,83	AUG 16,83	945	1800	1	160.0	0	11710	2	1	81	
OCT 13,83	SEP 13,83	1800	1345	1	80.0	0	11723	2	1	65	
NOV 8,83	OCT 13,83	1345	1440	1	44.9	0	11738	2	1	78	
DEC 6,83	NOV 8,83	1440	1500	3	65.4	0	11753	2	1	67	
JAN 4,84	DEC 6,83	1500	1526	2	90.0	0	11768	2	1	18	N

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 6,83	352.0	*****	4.20	0.1006	2.05	0.45	*****
MAR 1,83	FEB 1,83	583.0	33.6	4.22	0.0912	2.40	0.51	0.09
MAR 29,83	MAR 1,83	288.0	*****	4.20	U 0.2140	U 4.85	0.65	U 0.64
APR 26,83	MAR 29,83	865.0	26.4	4.32	0.0760	2.75	0.22	0.21
MAY 24,83	APR 26,83	1244.0	22.0	U 7.18	0.0298	3.30	0.29	0.29
JUN 21,83	MAY 24,83	1217.0	19.8	4.50	0.0562	2.40	0.19	0.20
JUL 19,83	JUN 21,83	1258.0	16.0	4.65	0.0456	1.70	0.23	0.21
AUG 16,83	JUL 19,83	1847.0	6.6	G 5.25	0.0272	0.85	0.07	0.22
SEP 13,83	AUG 16,83	4216.0	11.6	4.96	0.0956	1.45	0.18	0.18
OCT 13,83	SEP 13,83	1710.0	13.2	4.76	0.0408	1.50	0.14	0.12
NOV 8,83	OCT 13,83	1140.0	17.8	4.45	0.0528	2.10	0.21	0.18
DEC 6,83	NOV 8,83	1440.0	14.7	4.58	0.0442	1.50	0.20	0.16
JAN 4,84	DEC 6,83	531.0	11.7	4.78	0.0302	0.65	0.24	0.12

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MOONBEAM/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 6,83	0.18	0.33	*****	*****	*****	0.252	0.006
MAR 1,83	FEB 1,83	0.10	0.39	0.015	0.010	0.040	0.420	< 0.001
MAR 29,83	MAR 1,83	0.27	D 0.85	0.080	0.130	U 0.210	0.530	0.017
APR 26,83	MAR 29,83	0.05	0.19	0.030	0.020	0.030	0.130	< 0.002
MAY 24,83	APR 26,83	0.25	U 2.55	0.095	U 0.385	0.120	U 2.100	U 0.270
JUN 21,83	MAY 24,83	0.06	0.37	0.040	0.050	0.015	0.226	0.013
JUL 19,83	JUN 21,83	0.08	0.26	0.030	0.040	0.025	0.252	0.006
AUG 16,83	JUL 19,83	0.04	0.17	0.030	0.035	0.010	0.130	< 0.003
SEP 13,83	AUG 16,83	0.02	0.26	0.020	0.045	0.050	0.240	0.005
OCT 13,83	SEP 13,83	<W 0.01	0.13	0.015	0.030	0.035	0.132	0.011
NOV 8,83	OCT 13,83	0.22	0.17	0.030	0.055	0.100	0.144	0.007
DEC 6,83	NOV 8,83	D 0.20	0.12	0.045	0.050	B 0.140	0.062	0.006
JAN 4,84	DEC 6,83	0.16	0.06	0.025	< 0.005	0.065	0.034	0.006

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 6,83	0.001	0.002	< 0.005	0.012	0.007	< 0.002	0.028
MAR 1,83	FEB 1,83	0.002	0.002	0.008	0.017	0.005	< 0.002	0.028
MAR 29,83	MAR 1,83	0.007	< 0.001	0.014	0.073	0.010	< 0.002	0.121
APR 26,83	MAR 29,83	0.002	0.002	< 0.004	0.033	< 0.001	< 0.002	0.023
MAY 24,83	APR 26,83	0.003	< 0.001	0.008	0.044	0.003	< 0.002	0.037
JUN 21,83	MAY 24,83	0.002	< 0.001	< 0.004	0.017	0.003	< 0.002	0.016
JUL 19,83	JUN 21,83	0.003	< 0.001	0.008	0.029	0.002	< 0.002	0.045
AUG 16,83	JUL 19,83	0.002	< 0.001	0.004	0.025	0.001	< 0.002	0.022
SEP 13,83	AUG 16,83	0.002	< 0.001	< 0.002	0.028	0.011	< 0.002	0.021
OCT 13,83	SEP 13,83	0.002	< 0.001	< 0.003	0.027	< 0.001	< 0.002	0.039
NOV 8,83	OCT 13,83	0.002	< 0.001	L 0.004	L 0.014	0.003	< 0.002	L 0.013
DEC 6,83	NOV 8,83	0.001	< 0.001	0.004	0.027	0.003	< 0.002	0.031
JAN 4,84	DEC 6,83	0.002	0.001	0.005	0.030	0.004	< 0.002	0.036

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MOONBEAM/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 6,83	0.004	0.0002	0.0631
MAR 1,83	FEB 1,83	< 0.003	0.0007	0.0603
MAR 29,83	MAR 1,83	0.004	0.0002	0.0631
APR 26,83	MAR 29,83	0.004	0.0002	0.0479
MAY 24,83	APR 26,83	0.003	< 0.0001	U 0.0001
JUN 21,83	MAY 24,83	< 0.002	< 0.0001	0.0316
JUL 19,83	JUN 21,83	< 0.002	< 0.0001	0.0224
AUG 16,83	JUL 19,83	0.002	< 0.0001	G 0.0056
SEP 13,83	AUG 16,83	0.001	< 0.0001	0.0110
OCT 13,83	SEP 13,83	< 0.002	< 0.0001	0.0174
NOV 8,83	OCT 13,83	L< 0.001	0.0002	0.0355
DEC 6,83	NOV 8,83	0.001	< 0.0001	0.0263
JAN 4,84	DEC 6,83	< 0.003	0.0001	0.0166

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : RAMSEY/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 11,83	1130	930	3	17.9	0	11512	2	1	108	
MAR 1,83	FEB 1,83	930	900	4	31.7	0	11551	2	1	85	
MAR 29,83	MAR 1,83	900	900	4	68.5	0	11581	2	1	80	
APR 26,83	MAR 29,83	900	930	1	40.0	9	11597	2	1	90	
MAY 25,83	APR 26,83	930	1005	1	101.0	0	11632	2	1	81	A
JUN 21,83	MAY 25,83	1005	1200	1	89.0	0	11660	2	1	97	CD
JUL 24,83	JUN 21,83	1200	1000	1	50.0	0	11682	2	1	72	A

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 11,83	630.0	32.0	4.23	0.1026	2.15	0.55	0.04
MAR 1,83	FEB 1,83	877.0	33.0	4.12	0.0922	1.85	0.64	0.07
MAR 29,83	MAR 1,83	1793.0	18.2	4.53	0.0494	1.40	0.23	0.10
APR 26,83	MAR 29,83	1175.0	25.5	4.34	0.0740	2.10	0.22	0.08
MAY 25,83	APR 26,83	2662.0	25.2	4.41	0.0694	2.40	0.25	0.14
JUN 21,83	MAY 25,83	2814.0	29.5	4.29	0.0752	3.20	0.27	0.14
JUL 24,83	JUN 21,83	1176.0	21.0	4.57	0.0512	2.65	0.29	0.22

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : RAMSEY/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 11,83	0.11	0.26	<W 0.005	0.035	0.040	0.186	< 0.002
MAR 1,83	FEB 1,83	0.12	0.30	0.010	0.015	0.025	0.266	< 0.003
MAR 29,83	MAR 1,83	0.11	0.18	0.020	0.030	0.070	0.094	0.011
APR 26,83	MAR 29,83	0.05	0.22	0.025	0.020	0.065	0.062	0.012
MAY 25,83	APR 26,83	0.06	0.24	0.030	0.030	0.015	0.210	< 0.002
JUN 21,83	MAY 25,83	0.08	0.34	0.035	0.035	0.030	0.264	0.006
JUL 24,83	JUN 21,83	0.11	0.56	0.035	0.135	0.070	0.450	0.017

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 11,83	0.001	< 0.001	0.006	0.019	0.004	< 0.002	0.028
MAR 1,83	FEB 1,83	0.001	< 0.001	0.007	U 0.473	0.004	< 0.002	0.032
MAR 29,83	MAR 1,83	0.001	< 0.001	0.003	0.022	0.005	< 0.002	0.025
APR 26,83	MAR 29,83	0.001	< 0.001	0.005	0.034	0.005	< 0.002	0.032
MAY 25,83	APR 26,83	0.001	< 0.001	0.012	0.016	< 0.001	< 0.002	0.017
JUN 21,83	MAY 25,83	0.002	< 0.001	0.004	0.019	0.004	< 0.002	0.015
JUL 24,83	JUN 21,83	0.004	< 0.001	D 0.010	0.056	< 0.001	< 0.002	0.063

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : RAMSEY/CUMULATIVE PRECIP.

#26A

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 11,83	0.002	0.0001	0.0589
MAR 1,83	FEB 1,83	0.002	0.0001	0.0759
MAR 29,83	MAR 1,83	< 0.002	0.0001	0.0295
APR 26,83	MAR 29,83	0.002	< 0.0001	0.0457
MAY 25,83	APR 26,83	0.002	< 0.0001	0.0389
JUN 21,83	MAY 25,83	< 0.001	0.0002	0.0513
JUL 24,83	JUN 21,83	0.003	< 0.0001	0.0269

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : TURKEY LAKE/CUMULATIVE PRECIP.

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PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
OCT 11,83	SEP 13,83	1200	1100	1	133.0	2	11726	2	1	70	
NOV 8,83	OCT 11,83	1100	1100	1	114.6	2	11731	2	1	79	C
DEC 6,83	NOV 8,83	1100	1200	3	109.6	2	11745	2	1	89	
JAN 4,84	DEC 6,83	1200	1100	2	247.2	2	11760	2	1	U 37	I

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
OCT 11,83	SEP 13,83	3036.0	*****	4.77	0.0408	2.30	0.25	0.23
NOV 8,83	OCT 11,83	2957.0	17.4	4.53	0.0504	1.65	0.28	0.10
DEC 6,83	NOV 8,83	3175.0	23.1	4.30	0.0674	2.15	0.35	0.03
JAN 4,84	DEC 6,83	3002.0	12.6	4.67	0.0364	0.70	0.26	0.04

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : TURKEY LAKE/CUMULATIVE PRECIP.

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PAGE : 2

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
OCT 11,83	SEP 13,83	D 0.09	D 0.47	D 0.035	0.020	0.025	D 0.420	0.012
NOV 8,83	OCT 11,83	0.06	0.24	0.010	0.030	0.020	0.192	0.012
DEC 6,83	NOV 8,83	0.11	0.24	0.015	< 0.015	0.040	0.172	0.006
JAN 4,84	DEC 6,83	0.04	0.12	0.015	<W 0.005	0.035	0.096	< 0.003

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
OCT 11,83	SEP 13,83	0.003	< 0.001	0.003	0.026	0.003	< 0.002	0.040
NOV 8,83	OCT 11,83	0.002	< 0.001	L 0.013	L 0.020	0.003	< 0.002	L 0.009
DEC 6,83	NOV 8,83	0.001	< 0.001	0.003	0.020	0.004	< 0.002	0.012
JAN 4,84	DEC 6,83	< 0.001	< 0.001	< 0.003	0.009	0.001	< 0.002	0.010

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : TURKEY LAKE/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
OCT 11,83	SEP 13,83	< 0.001	0.0001	0.0170
NOV 8,83	OCT 11,83	L< 0.001	< 0.0001	0.0295
DEC 6,83	NOV 8,83	0.001	< 0.0001	0.0501
JAN 4,84	DEC 6,83	< 0.001	< 0.0001	0.0214

PART VII

NORTHWESTERN REGION

CUMULATIVE PRECIPITATION CHEMISTRY LISTINGS

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WHITNEY/CUMULATIVE PRECIP.

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PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 4,83	920	930	2	43.0	0	29173	2	1	88	HCM
MAR 1,83	FEB 1,83	940	900	3	38.0	0	29185	2	1	U 27	CFGJ
MAR 29,83	MAR 1,83	915	900	3	50.0	0	29193	2	1	U 35	CF C
APR 26,83	MAR 29,83	900	915	1	43.0	0	29199	2	1	U 110	FJC
MAY 24,83	APR 26,83	920	925	1	191.0	0	29208	2	1	U 22	FI
JUN 21,83	MAY 24,83	930	1340	1	45.0	0	29225	2	1	89	
JUL 19,83	JUN 21,83	1350	1100	1	38.0	0	29235	2	1	91	
AUG 16,83	JUL 19,83	1105	1400	1	58.0	0	29240	2	1	79	
SEP 13,83	AUG 16,83	1405	905	1	58.0	0	29244	2	1	U 79	FJ
OCT 12,83	SEP 13,83	910	840	1	117.0	0	29253	2	1	76	HM
NOV 8,83	OCT 12,83	845	930	3	92.0	0	29259	2	1	74	C
DEC 6,83	NOV 8,83	930	1430	3	55.0	0	29265	2	1	U 98	GF
DEC 21,83	DEC 6,83	1430	1200	3	*****	*	29279	2	1	***	FIJC

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 4,83	1230.0	U 81.0	4.64	0.0490	1.25	0.55	0.06
MAR 1,83	FEB 1,83	341.0	*****	*****	*****	*****	*****	*****
MAR 29,83	MAR 1,83	569.0	9.9	G 4.92	0.0302	0.80	0.17	0.09
APR 26,83	MAR 29,83	1544.0	32.4	4.26	0.0814	2.95	0.37	0.24
MAY 24,83	APR 26,83	1413.0	26.7	4.28	0.0750	2.70	0.27	0.18
JUN 21,83	MAY 24,83	1306.0	40.4	4.20	0.1014	4.10	0.56	0.29
JUL 19,83	JUN 21,83	1126.0	46.7	4.10	0.1106	5.45	0.47	0.34
AUG 16,83	JUL 19,83	1494.0	30.8	4.37	0.0796	3.70	0.31	0.25
SEP 13,83	AUG 16,83	1499.0	33.4	4.38	0.0666	4.30	0.41	0.32
OCT 12,83	SEP 13,83	2895.0	27.7	4.36	0.0804	3.05	0.44	0.14
NOV 8,83	OCT 12,83	2213.0	15.0	4.59	0.0470	1.35	0.23	0.04
DEC 6,83	NOV 8,83	1767.0	20.5	4.41	0.0554	1.65	0.37	0.06
DEC 21,83	DEC 6,83	838.0	21.2	4.36	0.0694	1.25	0.42	0.04

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WHITNEY/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 4,83	0.10	0.17	<T 0.005	0.010	0.030	0.120	0.004
MAR 1,83	FEB 1,83	*****	*****	*****	*****	*****	*****	*****
MAR 29,83	MAR 1,83	0.04	0.22	0.010	0.015	0.035	0.114	0.005
APR 26,83	MAR 29,83	0.16	0.42	0.040	0.035	0.095	0.152	0.006
MAY 24,83	APR 26,83	0.05	0.29	0.035	0.025	0.045	0.240	0.006
JUN 21,83	MAY 24,83	0.09	0.49	0.065	0.035	0.035	0.460	0.010
JUL 19,83	JUN 21,83	0.08	0.61	0.055	0.075	0.040	0.550	0.005
AUG 16,83	JUL 19,83	0.08	0.48	0.040	0.035	<W 0.005	0.450	0.007
SEP 13,83	AUG 16,83	0.17	0.90	0.045	0.175	U 0.155	0.670	0.040
OCT 12,83	SEP 13,83	<W 0.01	0.29	0.025	0.040	0.035	0.276	0.004
NOV 8,83	OCT 12,83	0.05	0.16	0.015	<T 0.005	0.040	0.112	0.005
DEC 6,83	NOV 8,83	0.09	0.27	0.010	<T 0.005	0.025	0.148	0.013
DEC 21,83	DEC 6,83	0.14	0.15	0.020	<T 0.005	0.085	0.060	0.011

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 4,83	< 0.001	< 0.001	0.003	0.008	0.007	< 0.002	< 0.009
MAR 1,83	FEB 1,83	*****	*****	*****	*****	*****	*****	*****
MAR 29,83	MAR 1,83	0.001	< 0.001	0.005	0.062	0.003	< 0.002	0.050
APR 26,83	MAR 29,83	0.005	0.001	0.007	0.053	0.005	< 0.002	0.058
MAY 24,83	APR 26,83	0.002	< 0.001	0.006	0.026	0.005	< 0.002	0.023
JUN 21,83	MAY 24,83	0.005	< 0.001	0.007	0.034	0.010	< 0.002	0.044
JUL 19,83	JUN 21,83	0.004	< 0.001	0.004	0.016	0.006	< 0.002	0.045
AUG 16,83	JUL 19,83	0.004	< 0.001	< 0.003	0.033	0.006	< 0.002	0.051
SEP 13,83	AUG 16,83	0.003	0.001	0.007	0.035	0.013	< 0.002	0.032
OCT 12,83	SEP 13,83	0.002	< 0.001	0.004	0.057	0.004	< 0.002	0.058
NOV 8,83	OCT 12,83	< 0.001	< 0.001	0.005	0.006	< 0.001	< 0.002	< 0.007
DEC 6,83	NOV 8,83	0.001	< 0.001	0.009	0.029	0.006	< 0.002	0.025
DEC 21,83	DEC 6,83	0.001	0.001	0.005	0.033	0.004	< 0.002	0.031

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WHITNEY/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 4,83	< 0.002	< 0.0001	0.0229
MAR 1,83	FEB 1,83	*****	*****	*****
MAR 29,83	MAR 1,83	0.008	0.0001	G 0.0120
APR 26,83	MAR 29,83	0.001	0.0002	0.0550
MAY 24,83	APR 26,83	< 0.002	0.0001	0.0525
JUN 21,83	MAY 24,83	< 0.002	0.0001	0.0631
JUL 19,83	JUN 21,83	< 0.002	0.0001	0.0794
AUG 16,83	JUL 19,83	< 0.002	0.0001	0.0427
SEP 13,83	AUG 16,83	0.001	0.0001	0.0417
OCT 12,83	SEP 13,83	< 0.001	< 0.0001	0.0437
NOV 8,83	OCT 12,83	< 0.001	< 0.0001	0.0257
DEC 6,83	NOV 8,83	< 0.002	0.0001	0.0389
DEC 21,83	DEC 6,83	0.004	0.0001	0.0437

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DORION/CUMULATIVE PRECIP.

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PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 4,83	930	900	4	38.8	0	13044	2	1	U 73	GCH
MAR 1,83	FEB 1,83	900	900	2	40.7	0	13046	2	1	85	D
MAR 29,83	MAR 1,83	900	900	4	36.7	0	13048	2	1	85	C
APR 26,83	MAR 29,83	900	900	1	54.4	0	13051	2	1	78	CD
MAY 24,83	APR 26,83	900	930	1	38.5	0	13052	2	1	85	ACD
JUN 21,83	MAY 24,83	1040	900	1	43.0	0	13057	2	1	94	ADC C
JUL 19,83	JUN 21,83	900	915	1	52.5	0	13058	2	1	88	D
AUG 16,83	JUL 19,83	915	900	1	86.0	0	13059	2	1	91	ACD
SEP 13,83	AUG 16,83	900	900	1	66.0	0	13060	2	1	85	ACD C
OCT 11,83	SEP 13,83	900	900	1	76.9	0	13062	2	1	U 80	ADI
NOV 8,83	OCT 11,83	900	900	3	61.7	0	13063	2	1	80	AC
DEC 6,83	NOV 8,83	900	900	2	131.7	0	13064	2	1	87	CD
JAN 3,84	DEC 6,83	900	1015	2	49.7	0	13065	2	1	U 70	CF

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 4,83	928.0	14.3	4.62	0.0568	0.85	0.24	0.08
MAR 1,83	FEB 1,83	1125.0	14.3	4.72	0.0422	1.05	0.31	0.11
MAR 29,83	MAR 1,83	1021.0	G 43.3	4.18	B 0.1996	4.30	0.61	0.40
APR 26,83	MAR 29,83	1387.0	29.5	4.31	0.0798	2.80	0.32	0.17
MAY 24,83	APR 26,83	1073.0	G 28.0	4.36	0.0690	3.25	0.35	0.29
JUN 21,83	MAY 24,83	1318.0	D 19.5	U 7.00	0.0316	D 2.00	0.18	0.52
JUL 19,83	JUN 21,83	1502.0	15.8	4.70	0.0396	1.90	0.31	0.29
AUG 16,83	JUL 19,83	2565.0	3.1	6.10	0.0168	0.35	D 0.07	0.05
SEP 13,83	AUG 16,83	1832.0	9.9	5.68	0.0156	1.20	0.26	0.28
OCT 11,83	SEP 13,83	2014.0	13.0	4.72	0.0428	1.35	0.21	0.17
NOV 8,83	OCT 11,83	1608.0	8.4	4.85	0.0296	0.65	0.08	0.05
DEC 6,83	NOV 8,83	3744.0	16.1	4.46	0.0492	1.25	0.24	0.06
JAN 3,84	DEC 6,83	1130.0	7.5	4.89	0.0278	0.50	0.08	0.04

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DORION/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 4,83	U 0.49	D 0.87	<W 0.005	0.080	U 0.370	0.112	0.012
MAR 1,83	FEB 1,83	0.09	0.33	0.010	< 0.005	0.050	0.254	0.009
MAR 29,83	MAR 1,83	0.13	0.71	0.040	0.020	0.080	0.370	0.017
APR 26,83	MAR 29,83	0.06	0.33	0.030	0.020	0.050	0.256	0.011
MAY 24,83	APR 26,83	0.14	0.54	0.055	0.085	0.055	0.460	0.016
JUN 21,83	MAY 24,83	0.18	U 2.15	0.085	0.040	G 0.155	U 1.350	U 0.195
JUL 19,83	JUN 21,83	0.11	0.40	0.035	0.050	0.045	0.370	0.006
AUG 16,83	JUL 19,83	< 0.01	0.51	<W 0.005	0.050	< 0.005	0.210	0.023
SEP 13,83	AUG 16,83	0.05	0.41	0.040	0.035	0.045	0.354	0.012
OCT 11,83	SEP 13,83	<W 0.01	0.23	0.025	0.035	0.040	0.100	0.004
NOV 8,83	OCT 11,83	0.04	0.07	0.005	< 0.010	0.040	0.006	0.016
DEC 6,83	NOV 8,83	0.07	0.08	0.010	< 0.005	0.030	0.010	0.006
JAN 3,84	DEC 6,83	0.05	0.05	0.010	< 0.005	0.040	<W 0.002	< 0.003

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 4,83	< 0.001	< 0.001	0.007	0.010	0.003	< 0.002	0.015
MAR 1,83	FEB 1,83	0.001	< 0.001	< 0.004	0.014	0.004	< 0.002	0.011
MAR 29,83	MAR 1,83	0.006	< 0.001	0.009	0.068	0.010	< 0.002	0.101
APR 26,83	MAR 29,83	0.002	< 0.001	0.006	0.116	0.006	< 0.002	0.032
MAY 24,83	APR 26,83	0.004	< 0.001	0.005	0.048	0.004	< 0.002	0.036
JUN 21,83	MAY 24,83	0.004	< 0.001	0.009	0.067	0.001	< 0.002	0.041
JUL 19,83	JUN 21,83	0.004	< 0.001	< 0.003	0.041	0.001	< 0.002	0.043
AUG 16,83	JUL 19,83	0.001	< 0.001	< 0.003	0.009	0.001	< 0.002	0.012
SEP 13,83	AUG 16,83	0.003	< 0.001	< 0.003	0.030	0.001	< 0.002	0.041
OCT 11,83	SEP 13,83	0.002	< 0.001	0.004	0.025	< 0.001	< 0.002	0.037
NOV 8,83	OCT 11,83	< 0.001	< 0.001	L 0.002	L 0.003	< 0.001	< 0.002	L 0.008
DEC 6,83	NOV 8,83	< 0.001	< 0.001	< 0.003	0.007	0.003	< 0.002	0.013
JAN 3,84	DEC 6,83	< 0.001	0.001	< 0.004	0.007	< 0.001	< 0.002	0.012

ONTARIO MINISTRY OF THE ENVIRONMENT
 CUMULATIVE SAMPLING ANALYSIS RESULTS
 APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DORION/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 4,83	< 0.002	0.0001	0.0240
MAR 1,83	FEB 1,83	< 0.002	< 0.0001	0.0191
MAR 29,83	MAR 1,83	0.001	0.0002	0.0661
APR 26,83	MAR 29,83	< 0.002	0.0001	0.0490
MAY 24,83	APR 26,83	0.002	< 0.0001	0.0437
JUN 21,83	MAY 24,83	< 0.002	0.0001	U 0.0001
JUL 19,83	JUN 21,83	< 0.002	< 0.0001	0.0200
AUG 16,83	JUL 19,83	< 0.001	< 0.0001	0.0008
SEP 13,83	AUG 16,83	0.001	< 0.0001	0.0021
OCT 11,83	SEP 13,83	< 0.001	0.0001	0.0191
NOV 8,83	OCT 11,83	L< 0.001	< 0.0001	0.0141
DEC 6,83	NOV 8,83	0.001	< 0.0001	0.0347
JAN 3,84	DEC 6,83	0.001	< 0.0001	0.0129

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : EAR FALL'S/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 4,83	900	900	2	28.2	0	13545	2	1	U 80	CG
MAR 1,83	FEB 1,83	900	900	2	9.4	0	13547	2	1	U 86	DIF
MAR 29,83	MAR 1,83	900	900	3	44.3	0	13549	2	1	U 52	CI
APR 26,83	MAR 29,83	930	900	1	3.2	0	13551	2	1	380	ACD N
MAY 5,83	APR 26,83	900	900	3	9.5	0	13555	2	1	34	CD N
MAY 24,83	MAY 5,83	900	900	1	55.0	0	13554	2	1	62	ACD H
JUN 21,83	MAY 24,83	900	900	1	65.0	0	13556	2	1	92	CD
JUL 19,83	JUN 21,83	900	900	1	65.0	0	13557	2	1	72	CDA HCM
AUG 16,83	JUL 19,83	900	900	1	90.0	0	13558	2	1	67	ACD H
SEP 13,83	AUG 16,83	900	900	1	90.0	0	13559	2	1	73	C HCM
OCT 11,83	SEP 13,83	900	900	4	51.4	0	13560	2	1	U 33	ABCFJQ
NOV 8,83	OCT 11,83	900	900	1	17.7	0	13561	2	1	61	BC
DEC 6,83	NOV 8,83	900	1040	2	58.8	0	13562	2	1	50	CD
JAN 4,84	DEC 6,83	1040	900	1	11.1	0	13564	2	1	41	D N

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 4,83	735.0	12.6	4.55	0.0624	1.05	0.22	0.08
MAR 1,83	FEB 1,83	263.0	20.5	4.52	0.0606	1.40	0.40	0.10
MAR 29,83	MAR 1,83	748.0	30.0	4.32	0.0726	3.25	0.48	0.35
APR 26,83	MAR 29,83	395.0	20.1	4.55	0.0534	2.00	0.24	0.31
MAY 5,83	APR 26,83	106.0	*****	*****	*****	4.45	0.72	U 2.00
MAY 24,83	MAY 5,83	1113.0	11.0	5.27	0.0266	1.70	0.21	0.31
JUN 21,83	MAY 24,83	1955.0	9.4	4.87	0.0362	1.20	0.17	0.13
JUL 19,83	JUN 21,83	1523.0	8.7	6.46	0.0180	1.20	0.24	0.13
AUG 16,83	JUL 19,83	1958.0	8.4	5.13	0.0292	0.80	0.22	0.26
SEP 13,83	AUG 16,83	2150.0	6.8	U 7.15	0.0106	0.60	0.16	U 0.76
OCT 11,83	SEP 13,83	557.0	11.4	U 6.33	0.0230	2.20	0.34	U 0.61
NOV 8,83	OCT 11,83	354.0	15.5	4.81	0.0346	1.70	0.23	0.26
DEC 6,83	NOV 8,83	972.0	9.4	4.73	0.0324	0.65	0.16	0.05
JAN 4,84	DEC 6,83	148.0	*****	*****	*****	*****	*****	*****

ONTARIO MINISTRY OF THE ENVIRONMENT
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APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : EAR FALL'S/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 4,83	0.10	0.30	<W 0.005	0.030	0.060	0.200	< 0.002
MAR 1,83	FEB 1,83	0.25	0.37	0.020	0.020	0.215	0.226	0.028
MAR 29,83	MAR 1,83	0.17	0.54	0.030	0.040	0.130	0.440	0.012
APR 26,83	MAR 29,83	0.17	0.32	0.055	0.025	0.135	0.136	0.026
MAY 5,83	APR 26,83	0.47	1.21	U 0.325	0.075	U 0.395	0.730	0.057
MAY 24,83	MAY 5,83	0.05	0.44	0.055	0.045	0.030	0.420	0.013
JUN 21,83	MAY 24,83	<W 0.01	0.32	0.020	0.040	0.015	0.228	0.013
JUL 19,83	JUN 21,83	0.09	0.60	0.035	0.145	0.020	0.450	D 0.050
AUG 16,83	JUL 19,83	0.05	0.25	0.060	0.050	< 0.010	0.180	0.007
SEP 13,83	AUG 16,83	< 0.01	0.29	D 0.100	D 0.130	< 0.005	0.120	D 0.033
OCT 11,83	SEP 13,83	<W 0.01	U 0.67	0.100	U 0.185	0.060	0.440	D 0.040
NOV 8,83	OCT 11,83	0.22	0.45	D 0.050	0.150	B 0.180	0.262	0.027
DEC 6,83	NOV 8,83	0.11	0.07	0.015	<W 0.005	0.065	0.012	0.014
JAN 4,84	DEC 6,83	*****	*****	*****	*****	*****	*****	*****

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 4,83	0.001	< 0.001	0.004	0.021	0.003	< 0.002	0.022
MAR 1,83	FEB 1,83	0.003	0.003	0.015	0.122	0.004	< 0.002	0.070
MAR 29,83	MAR 1,83	0.004	< 0.001	0.006	0.072	0.004	< 0.002	0.104
APR 26,83	MAR 29,83	0.004	< 0.001	0.005	0.086	0.004	< 0.002	0.069
MAY 5,83	APR 26,83	*****	*****	*****	*****	*****	*****	*****
MAY 24,83	MAY 5,83	0.005	< 0.001	0.004	0.081	< 0.001	< 0.002	0.063
JUN 21,83	MAY 24,83	0.002	< 0.001	< 0.003	0.030	0.003	< 0.002	0.032
JUL 19,83	JUN 21,83	0.004	< 0.001	0.005	0.054	< 0.001	< 0.002	0.042
AUG 16,83	JUL 19,83	0.005	< 0.001	< 0.003	0.060	0.001	< 0.002	0.047
SEP 13,83	AUG 16,83	U 0.022	0.001	0.002	0.092	0.001	< 0.002	0.103
OCT 11,83	SEP 13,83	U 0.017	< 0.001	0.011	0.145	0.004	< 0.002	0.151
NOV 8,83	OCT 11,83	0.012	U 0.015	L 0.011	L 0.051	0.006	< 0.002	L 0.038
DEC 6,83	NOV 8,83	0.001	< 0.001	0.005	0.033	0.003	< 0.002	D 0.050
JAN 4,84	DEC 6,83	*****	*****	*****	*****	*****	*****	*****

ONTARIO MINISTRY OF THE ENVIRONMENT
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STATION NAME : EAR FALL'S/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 4,83	0.002	< 0.0001	0.0282
MAR 1,83	FEB 1,83	0.004	0.0002	0.0302
MAR 29,83	MAR 1,83	0.006	0.0002	0.0479
APR 26,83	MAR 29,83	0.003	0.0003	0.0282
MAY 5,83	APR 26,83	*****	*****	*****
MAY 24,83	MAY 5,83	0.002	< 0.0001	0.0054
JUN 21,83	MAY 24,83	< 0.002	< 0.0001	0.0135
JUL 19,83	JUN 21,83	< 0.002	< 0.0001	0.0003
AUG 16,83	JUL 19,83	0.002	< 0.0001	0.0074
SEP 13,83	AUG 16,83	0.001	< 0.0001	U 0.0001
OCT 11,83	SEP 13,83	< 0.003	0.0001	U 0.0005
NOV 8,83	OCT 11,83	L 0.002	0.0012	0.0155
DEC 6,83	NOV 8,83	0.003	< 0.0001	0.0186
JAN 4,84	DEC 6,83	*****	*****	*****

ONTARIO MINISTRY OF THE ENVIRONMENT
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APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : EXP. LAKES AREA/CUMULATIVE PRECIP. #34

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REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 4,83	JAN 4,83	810	1400	4	14.3	0	13159	2	1	U 19	GHQ
MAR 1,83	FEB 4,83	1400	800	3	18.3	0	13161	2	1	39	D N
MAR 29,83	MAR 1,83	800	800	4	24.4	0	13163	2	1	67	C
APR 26,83	MAR 30,83	800	900	3	0.9	0	13165	2	1	U ***	ACDF
MAY 4,83	APR 26,83	900	1600	1	22.0	0	13167	2	1	21	D N
MAY 24,83	MAY 4,83	1600	800	1	37.0	0	13168	2	1	86	D H
JUN 21,83	MAY 24,83	800	845	1	73.0	0	13170	2	1	83	ACD HM
JUL 19,83	JUN 21,83	845	800	1	63.0	0	13172	2	1	U 88	CDGH
AUG 16,83	JUL 19,83	800	800	1	37.0	0	13173	2	1	62	ACD
SEP 13,83	AUG 16,83	828	810	1	60.0	0	13061	2	1	87	CD C
OCT 11,83	SEP 13,83	810	800	1	56.7	3	13174	2	1	85	CD
NOV 8,83	OCT 11,83	800	800	1	1.3	0	13175	2	1	547	C N
DEC 6,83	NOV 8,83	800	800	2	36.2	0	13176	2	1	U 47	CDG
JAN 3,84	DEC 6,83	800	800	2	22.1	0	13177	2	1	13	C N

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 4,83	JAN 4,83	92.0	*****	4.76	0.0448	0.65	0.26	*****
MAR 1,83	FEB 4,83	234.0	18.7	*****	*****	1.40	0.48	0.11
MAR 29,83	MAR 1,83	533.0	28.0	4.41	0.0644	2.95	0.56	0.33
APR 26,83	MAR 30,83	366.0	21.2	4.42	U 0.3120	1.60	0.27	0.07
MAY 4,83	APR 26,83	151.0	*****	U 6.94	0.0214	2.90	0.51	U 1.34
MAY 24,83	MAY 4,83	1034.0	13.9	5.09	0.0306	2.30	0.33	0.59
JUN 21,83	MAY 24,83	1984.0	5.9	5.43	0.0254	0.75	0.13	0.34
JUL 19,83	JUN 21,83	1812.0	7.9	6.16	0.0200	0.85	0.22	0.19
AUG 16,83	JUL 19,83	751.0	6.1	6.04	0.0200	0.75	0.24	0.24
SEP 13,83	AUG 16,83	1705.0	7.9	6.33	0.0142	0.85	0.29	0.28
OCT 11,83	SEP 13,83	1567.0	10.7	5.09	0.0312	1.55	0.23	0.17
NOV 8,83	OCT 11,83	231.0	23.4	4.69	0.0404	2.30	0.38	*****
DEC 6,83	NOV 8,83	556.0	7.2	4.92	0.0268	0.50	0.10	0.04
JAN 3,84	DEC 6,83	98.0	17.5	4.53	0.0476	0.95	0.41	*****

ONTARIO MINISTRY OF THE ENVIRONMENT
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APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : EXP. LAKES AREA/CUMULATIVE PRECIP. #34

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 4,83	JAN 4,83	0.21	*****	*****	*****	*****	*****	*****
MAR 1,83	FEB 4,83	0.06	0.62	0.015	0.030	0.050	0.470	0.007
MAR 29,83	MAR 1,83	0.12	0.58	0.030	0.030	0.110	0.490	0.009
APR 26,83	MAR 30,83	0.07	0.23	0.015	0.030	0.075	0.118	0.023
MAY 4,83	APR 26,83	0.34	1.23	U 0.185	0.080	U 0.275	0.900	0.035
MAY 24,83	MAY 4,83	0.06	0.63	0.095	0.070	0.090	0.600	0.008
JUN 21,83	MAY 24,83	<W 0.01	0.28	0.105	0.160	0.035	0.206	0.009
JUL 19,83	JUN 21,83	U 0.36	0.49	0.035	U 0.265	U 0.240	0.282	< 0.003
AUG 16,83	JUL 19,83	0.05	0.42	0.045	0.050	0.020	0.326	0.009
SEP 13,83	AUG 16,83	0.02	0.44	0.055	0.050	0.015	0.346	0.008
OCT 11,83	SEP 13,83	<W 0.01	0.37	0.020	0.040	0.040	0.348	0.009
NOV 8,83	OCT 11,83	0.23	0.51	*****	*****	*****	0.420	0.019
DEC 6,83	NOV 8,83	0.10	0.08	0.010	<W 0.005	0.040	0.018	0.010
JAN 3,84	DEC 6,83	0.23	0.20	*****	*****	*****	*****	0.036

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 4,83	JAN 4,83	0.005	U 0.030	< 0.024	U 0.557	0.006	< 0.002	0.080
MAR 1,83	FEB 4,83	< 0.001	< 0.001	0.006	0.044	0.003	< 0.002	0.025
MAR 29,83	MAR 1,83	0.004	< 0.001	0.008	0.080	0.005	< 0.002	0.106
APR 26,83	MAR 30,83	0.004	< 0.001	0.008	0.025	0.004	< 0.002	0.028
MAY 4,83	APR 26,83	*****	*****	*****	*****	*****	*****	*****
MAY 24,83	MAY 4,83	0.007	< 0.001	0.005	0.060	0.001	< 0.002	0.079
JUN 21,83	MAY 24,83	0.002	< 0.001	< 0.003	0.031	0.002	< 0.002	0.035
JUL 19,83	JUN 21,83	0.003	< 0.001	0.011	0.030	0.001	< 0.002	0.024
AUG 16,83	JUL 19,83	0.008	< 0.001	0.003	0.118	0.003	< 0.002	0.118
SEP 13,83	AUG 16,83	0.006	0.001	< 0.003	0.046	< 0.001	< 0.002	0.054
OCT 11,83	SEP 13,83	0.003	< 0.001	0.004	0.090	0.004	< 0.002	0.119
NOV 8,83	OCT 11,83	0.004	< 0.001	L 0.004	L 0.007	0.003	< 0.002	L 0.022
DEC 6,83	NOV 8,83	< 0.001	< 0.001	0.005	0.032	0.001	< 0.002	0.023
JAN 3,84	DEC 6,83	*****	*****	*****	*****	*****	*****	*****

ONTARIO MINISTRY OF THE ENVIRONMENT
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APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : EXP. LAKES AREA/CUMULATIVE PRECIP. #34

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 4,83	JAN 4,83	U 0.022	0.0002	0.0174
MAR 1,83	FEB 4,83	< 0.005	0.0001	*****
MAR 29,83	MAR 1,83	0.002	0.0002	0.0389
APR 26,83	MAR 30,83	< 0.004	< 0.0001	0.0380
MAY 4,83	APR 26,83	*****	*****	U 0.0001
MAY 24,83	MAY 4,83	0.006	0.0001	0.0081
JUN 21,83	MAY 24,83	< 0.002	< 0.0001	0.0037
JUL 19,83	JUN 21,83	< 0.002	U 0.0120	0.0007
AUG 16,83	JUL 19,83	0.003	< 0.0001	0.0009
SEP 13,83	AUG 16,83	0.001	< 0.0001	0.0005
OCT 11,83	SEP 13,83	< 0.002	< 0.0001	0.0081
NOV 8,83	OCT 11,83	L< 0.001	< 0.0001	0.0204
DEC 6,83	NOV 8,83	< 0.003	< 0.0001	0.0120
JAN 3,84	DEC 6,83	*****	*****	0.0295

ONTARIO MINISTRY OF THE ENVIRONMENT
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APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : GERALDTON/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
SEP 13,83	AUG 16,83	1900	1000	1	229.0	0	13307	2	1	49	CD N
OCT 11,83	SEP 13,83	1000	915	1	66.1	0	13308	2	1	71	ACD
NOV 8,83	OCT 11,83	915	1000	3	60.4	0	13309	2	1	110	AC HC
DEC 6,83	NOV 8,83	1000	930	3	104.0	0	13310	2	1	36	N
JAN 3,84	DEC 6,83	930	1000	2	6.0	0	13311	2	1	55	

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
SEP 13,83	AUG 16,83	3697.0	10.2	5.16	0.0184	1.10	0.25	0.22
OCT 11,83	SEP 13,83	1539.0	14.0	4.78	0.0388	2.05	0.22	0.22
NOV 8,83	OCT 11,83	2169.0	8.2	5.18	0.0232	0.90	0.11	0.07
DEC 6,83	NOV 8,83	1229.0	12.5	4.58	0.0414	1.15	0.12	0.04
JAN 3,84	DEC 6,83	108.0	7.3	5.12	0.0258	0.65	<W 0.01	*****

ONTARIO MINISTRY OF THE ENVIRONMENT
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STATION NAME : GERALDTON/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
SEP 13,83	AUG 16,83	0.04	0.41	0.025	0.035	0.030	0.314	0.007
OCT 11,83	SEP 13,83	<W 0.01	0.32	0.030	0.035	0.035	0.304	<T 0.002
NOV 8,83	OCT 11,83	0.05	0.40	0.015	0.085	0.045	0.248	0.034
DEC 6,83	NOV 8,83	0.09	0.11	0.010	<W 0.005	0.050	0.018	0.010
JAN 3,84	DEC 6,83	0.45	0.22	*****	*****	*****	*****	0.070

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
SEP 13,83	AUG 16,83	0.002	< 0.001	< 0.003	0.012	< 0.001	< 0.002	0.021
OCT 11,83	SEP 13,83	0.002	< 0.001	0.006	0.024	0.002	< 0.002	0.033
NOV 8,83	OCT 11,83	< 0.001	< 0.001	L 0.014	L 0.007	0.003	< 0.002	L 0.008
DEC 6,83	NOV 8,83	< 0.001	< 0.001	< 0.004	0.004	0.001	< 0.002	0.012
JAN 3,84	DEC 6,83	*****	*****	*****	*****	*****	*****	*****

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : GERALDTON/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
SEP 13,83	AUG 16,83	0.001	< 0.0001	0.0069
OCT 11,83	SEP 13,83	< 0.002	0.0002	0.0166
NOV 8,83	OCT 11,83	L< 0.001	< 0.0001	0.0066
DEC 6,83	NOV 8,83	0.002	< 0.0001	0.0263
JAN 3,84	DEC 6,83	*****	*****	0.0076

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : LAC LA CROIX/CUMULATIVE PRECIP. #33

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REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 8,83	JAN 4,83	900	900	4	21.8	0	95030	2	1	U 1	GH N
MAR 1,83	FEB 8,83	900	900	3	27.5	0	95033	2	1	100	
MAR 29,83	MAR 1,83	900	900	4	3.5	0	95034	2	1	104	C
APR 19,83	MAR 29,83	900	900	3	27.5	0	95036	2	1	74	CD
APR 27,83	APR 19,83	900	1130	1	1.3	0	95038	2	1	296	CD N
MAY 24,83	APR 27,83	1130	900	1	6.6	0	95045	2	1	421	ACD N
JUN 2,83	MAY 24,83	900	1000	1	19.9	0	95040	2	1	U 4	ADG
JUN 21,83	JUN 2,83	900	900	1	18.8	0	95046	2	1	455	CD N
JUL 19,83	JUN 21,83	900	900	1	69.5	0	95047	2	1	56	CD
AUG 16,83	JUL 19,83	900	900	1	73.9	0	95048	2	1	73	ACD H
SEP 13,83	AUG 16,83	900	900	1	105.8	0	95049	2	1	U 101	BCGJ HCM
OCT 11,83	SEP 13,83	900	900	1	65.8	0	95050	2	1	U 105	G HC
DEC 6,83	NOV 14,83	900	900	3	44.5	0	95052	2	1	U 21	G
JAN 3,84	DEC 6,83	900	900	2	22.4	0	95054	2	1	43	D N

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 8,83	JAN 4,83	11.0	*****	*****	*****	*****	*****	*****
MAR 1,83	FEB 8,83	901.0	17.4	4.73	0.0460	1.75	0.44	0.12
MAR 29,83	MAR 1,83	119.0	*****	*****	*****	4.60	0.56	0.75
APR 19,83	MAR 29,83	663.0	12.4	5.16	0.0270	2.00	0.26	0.87
APR 27,83	APR 19,83	125.0	*****	U 7.11	0.0220	2.65	0.51	U 1.26
MAY 24,83	APR 27,83	904.0	17.8	4.69	0.0468	2.30	0.33	0.40
JUN 2,83	MAY 24,83	27.0	*****	*****	*****	*****	*****	*****
JUN 21,83	JUN 2,83	2782.0	10.6	5.00	0.0416	1.45	0.21	0.20
JUL 19,83	JUN 21,83	1268.0	9.1	4.93	0.0322	0.70	0.21	0.08
AUG 16,83	JUL 19,83	1761.0	7.9	5.67	0.0224	1.00	0.24	0.20
SEP 13,83	AUG 16,83	3474.0	6.2	6.45	0.0114	0.65	0.16	0.21
OCT 11,83	SEP 13,83	2255.0	9.8	5.21	0.0290	1.20	0.19	0.14
DEC 6,83	NOV 14,83	308.0	17.8	4.46	0.0480	1.60	0.28	0.20
JAN 3,84	DEC 6,83	315.0	11.8	4.67	0.0356	0.85	0.27	D 0.19

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 8,83	JAN 4,83	*****	*****	*****	*****	*****	*****	*****
MAR 1,83	FEB 8,83	0.04	0.69	0.010	0.010	0.020	0.610	0.004
MAR 29,83	MAR 1,83	0.22	1.19	0.065	D 0.105	0.130	0.710	0.011
APR 19,83	MAR 29,83	0.07	0.12	0.110	0.045	0.060	0.036	0.006
APR 27,83	APR 19,83	0.43	1.32	U 0.200	0.060	U 0.330	*****	0.062
MAY 24,83	APR 27,83	0.10	0.50	0.100	0.055	0.080	0.286	0.023
JUN 2,83	MAY 24,83	*****	*****	*****	*****	*****	*****	*****
JUN 21,83	JUN 2,83	<W 0.01	0.41	0.025	0.080	0.015	0.332	0.011
JUL 19,83	JUN 21,83	0.02	0.31	0.020	0.055	0.015	0.172	0.015
AUG 16,83	JUL 19,83	0.02	0.61	0.030	D 0.065	0.030	0.410	0.033
SEP 13,83	AUG 16,83	0.02	0.29	0.035	0.030	<T 0.010	0.240	0.005
OCT 11,83	SEP 13,83	<W 0.01	0.25	0.020	0.040	0.035	0.232	<W 0.001
DEC 6,83	NOV 14,83	0.08	0.18	0.030	0.020	0.040	0.018	0.018
JAN 3,84	DEC 6,83	0.18	0.10	D 0.045	<T 0.010	0.170	<W 0.002	0.025

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 8,83	JAN 4,83	*****	*****	*****	*****	*****	*****	*****
MAR 1,83	FEB 8,83	0.001	< 0.001	0.003	0.027	0.003	< 0.002	0.009
MAR 29,83	MAR 1,83	*****	*****	*****	*****	*****	*****	*****
APR 19,83	MAR 29,83	G 0.055	0.001	0.008	0.180	0.005	< 0.002	0.115
APR 27,83	APR 19,83	*****	*****	*****	*****	*****	*****	*****
MAY 24,83	APR 27,83	0.009	< 0.001	0.003	0.063	0.003	< 0.002	0.058
JUN 2,83	MAY 24,83	*****	*****	*****	*****	*****	*****	*****
JUN 21,83	JUN 2,83	0.004	< 0.001	0.002	0.023	0.003	< 0.002	0.022
JUL 19,83	JUN 21,83	0.002	< 0.001	< 0.003	D 0.163	0.003	< 0.002	0.060
AUG 16,83	JUL 19,83	0.004	< 0.001	0.003	0.071	0.009	< 0.002	0.059
SEP 13,83	AUG 16,83	0.004	0.002	< 0.003	0.024	< 0.001	< 0.002	0.031
OCT 11,83	SEP 13,83	0.002	< 0.001	0.002	0.048	0.001	< 0.002	0.064
DEC 6,83	NOV 14,83	0.002	0.002	0.006	0.081	0.004	< 0.002	0.104
JAN 3,84	DEC 6,83	0.002	0.004	0.006	0.054	D 0.002	< 0.002	0.065

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 8,83	JAN 4,83	*****	*****	*****
MAR 1,83	FEB 8,83	< 0.002	< 0.0001	0.0186
MAR 29,83	MAR 1,83	*****	*****	*****
APR 19,83	MAR 29,83	0.002	0.0001	0.0069
APR 27,83	APR 19,83	*****	*****	U 0.0001
MAY 24,83	APR 27,83	< 0.002	< 0.0001	0.0204
JUN 2,83	MAY 24,83	*****	*****	*****
JUN 21,83	JUN 2,83	0.001	0.0001	0.0100
JUL 19,83	JUN 21,83	< 0.001	0.0001	0.0117
AUG 16,83	JUL 19,83	< 0.002	< 0.0001	0.0021
SEP 13,83	AUG 16,83	0.001	< 0.0001	0.0004
OCT 11,83	SEP 13,83	0.001	0.0003	0.0062
DEC 6,83	NOV 14,83	< 0.004	0.0003	0.0347
JAN 3,84	DEC 6,83	< 0.004	< 0.0001	0.0214

ONTARIO MINISTRY OF THE ENVIRONMENT
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APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : NAKINA/CUMULATIVE PRECIP. #30A

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REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 4,83	945	825	4	23.8	0	13293	2	1	86	C
MAR 1,83	FEB 1,83	840	824	4	22.0	0	13295	2	1	81	D
MAR 29,83	MAR 1,83	830	1300	4	42.8	0	13297	2	1	51	
APR 26,83	MAR 29,83	1300	820	3	18.6	0	13300	2	1	64	D C
MAY 18,83	APR 26,83	835	1500	3	9.1	0	13301	2	1	U 50	CDG H
MAY 24,83	MAY 18,83	1500	815	1	14.0	0	13303	2	1	102	CD HC
JUN 21,83	MAY 24,83	815	815	1	34.0	0	13305	2	1	74	CD HCM
JUL 19,83	JUN 21,83	830	830	1	73.5	0	13306	2	1	69	D

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 4,83	667.0	17.0	4.37	0.0766	1.00	0.31	0.07
MAR 1,83	FEB 1,83	585.0	14.8	4.56	0.0506	1.10	0.28	0.09
MAR 29,83	MAR 1,83	718.0	G 53.5	*****	*****	G 5.70	0.69	0.38
APR 26,83	MAR 29,83	387.0	5.6	B 6.12	0.0178	0.75	0.06	0.44
MAY 18,83	APR 26,83	148.0	*****	5.12	0.0304	G 4.75	G 0.62	U 1.95
MAY 24,83	MAY 18,83	464.0	5.7	5.63	0.0210	0.75	0.05	0.19
JUN 21,83	MAY 24,83	819.0	8.0	5.16	B 0.1154	1.10	0.14	0.15
JUL 19,83	JUN 21,83	1653.0	14.0	4.83	0.0374	1.55	0.24	0.21

ONTARIO MINISTRY OF THE ENVIRONMENT
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APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : NAKINA/CUMULATIVE PRECIP. #30A

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 4,83	0.13	0.19	< 0.005	0.015	0.070	0.022	0.014
MAR 1,83	FEB 1,83	0.11	0.20	0.010	< 0.005	0.075	0.136	0.006
MAR 29,83	MAR 1,83	0.20	0.81	0.040	0.020	0.180	0.590	0.021
APR 26,83	MAR 29,83	0.22	0.12	0.085	0.015	0.155	< 0.004	0.013
MAY 18,83	APR 26,83	G 0.56	0.68	U 0.320	0.095	U 0.415	0.410	0.037
MAY 24,83	MAY 18,83	0.04	0.21	0.040	0.035	0.015	0.140	0.007
JUN 21,83	MAY 24,83	0.04	0.28	0.025	0.045	0.020	0.060	0.010
JUL 19,83	JUN 21,83	0.09	0.38	0.025	0.025	0.020	0.354	< 0.002

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 4,83	0.001	< 0.001	0.005	0.022	0.003	< 0.002	0.025
MAR 1,83	FEB 1,83	< 0.001	< 0.001	0.004	0.034	0.005	< 0.002	0.023
MAR 29,83	MAR 1,83	0.004	0.001	0.009	0.100	0.009	< 0.002	0.133
APR 26,83	MAR 29,83	0.001	< 0.001	< 0.007	0.078	0.002	< 0.002	0.064
MAY 18,83	APR 26,83	*****	*****	*****	*****	*****	*****	*****
MAY 24,83	MAY 18,83	0.002	< 0.001	0.005	0.065	0.003	< 0.002	0.042
JUN 21,83	MAY 24,83	0.002	< 0.001	< 0.004	0.047	0.003	< 0.002	0.032
JUL 19,83	JUN 21,83	0.004	< 0.001	< 0.003	0.052	0.003	< 0.002	0.041

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STATION NAME : NAKINA/CUMULATIVE PRECIP. #30A

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 4,83	0.002	< 0.0001	0.0427
MAR 1,83	FEB 1,83	< 0.003	0.0002	0.0275
MAR 29,83	MAR 1,83	0.002	0.0003	*****
APR 26,83	MAR 29,83	< 0.004	< 0.0001	B 0.0008
MAY 18,83	APR 26,83	*****	*****	0.0076
MAY 24,83	MAY 18,83	0.005	< 0.0001	0.0023
JUN 21,83	MAY 24,83	< 0.002	< 0.0001	0.0069
JUL 19,83	JUN 21,83	< 0.002	< 0.0001	0.0148

ONTARIO MINISTRY OF THE ENVIRONMENT
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APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PICKLE LAKE/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 10,83	1145	1035	4	15.8	0	13793	2	1	74	C
MAR 1,83	FEB 1,83	1100	957	2	10.9	0	13795	2	1	78	D
MAR 29,83	MAR 1,83	1000	940	4	37.0	0	13797	2	1	81	C
APR 26,83	MAR 29,83	940	1140	3	8.4	0	13799	2	1	U 61	BCDF
MAY 24,83	APR 26,83	1140	1030	1	24.8	0	13801	2	1	75	ABCD
JUN 21,83	MAY 24,83	1030	735	1	13.0	0	13805	2	1	94	ABCD HM
JUL 19,83	JUN 21,83	735	1025	1	160.0	0	13806	2	1	78	CD
AUG 22,83	JUL 19,83	1025	1015	1	47.0	0	13807	2	1	U 73	ACDJ
SEP 19,83	AUG 22,83	1015	1045	1	42.0	0	13808	2	1	71	CD CM
OCT 11,83	SEP 19,83	1045	915	1	69.0	0	13809	2	1	82	C HCM
NOV 8,83	OCT 11,83	915	745	3	26.8	0	13810	2	1	U 87	CFJ C
DEC 6,83	NOV 8,83	745	730	2	65.5	0	13811	2	1	U 93	CDBGJ C
JAN 3,84	DEC 6,83	730	735	2	18.2	0	13812	2	1	77	CD C

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 10,83	381.0	15.1	4.45	0.0592	0.80	0.24	0.05
MAR 1,83	FEB 1,83	279.0	21.6	4.47	0.0634	1.40	0.48	D 0.19
MAR 29,83	MAR 1,83	984.0	28.6	4.36	0.0656	3.35	0.34	0.27
APR 26,83	MAR 29,83	167.0	*****	*****	*****	2.90	0.42	*****
MAY 24,83	APR 26,83	606.0	14.8	U 6.59	0.0190	2.80	0.33	U 1.20
JUN 21,83	MAY 24,83	397.0	8.2	5.20	0.0330	1.25	0.13	0.21
JUL 19,83	JUN 21,83	4074.0	6.5	5.12	0.0260	0.70	0.14	0.15
AUG 22,83	JUL 19,83	1121.0	6.8	6.65	0.0176	0.95	0.20	0.50
SEP 19,83	AUG 22,83	980.0	15.3	U 7.43	0.0084	1.10	0.24	U 1.80
OCT 11,83	SEP 19,83	1842.0	5.0	5.66	0.0204	0.45	0.06	0.06
NOV 8,83	OCT 11,83	765.0	8.3	5.27	0.0222	0.75	0.10	0.15
DEC 6,83	NOV 8,83	1990.0	5.1	5.25	0.0214	0.35	0.06	0.04
JAN 3,84	DEC 6,83	460.0	4.1	G 5.56	0.0166	0.25	0.02	0.06

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 10,83	0.13	0.11	<W 0.005	0.025	0.095	0.036	0.007
MAR 1,83	FEB 1,83	0.34	0.34	0.020	D 0.100	U 0.270	0.158	0.018
MAR 29,83	MAR 1,83	0.12	0.59	0.045	0.035	0.100	0.460	0.016
APR 26,83	MAR 29,83	0.49	0.41	*****	*****	*****	0.086	0.027
MAY 24,83	APR 26,83	0.25	1.17	U 0.230	U 0.230	U 0.185	0.340	0.070
JUN 21,83	MAY 24,83	0.04	0.60	0.165	U 0.430	U 0.285	0.164	0.036
JUL 19,83	JUN 21,83	0.03	0.19	0.020	0.035	0.015	0.152	0.007
AUG 22,83	JUL 19,83	0.05	0.32	0.100	0.080	<T 0.010	0.230	0.012
SEP 19,83	AUG 22,83	0.03	0.47	U 0.330	G 0.180	0.025	0.200	0.069
OCT 11,83	SEP 19,83	<W 0.01	0.08	0.010	0.030	0.020	0.072	<T 0.001
NOV 8,83	OCT 11,83	0.07	0.24	0.015	0.055	0.055	0.158	0.015
DEC 6,83	NOV 8,83	0.15	0.05	0.020	<T 0.005	0.095	0.010	0.006
JAN 3,84	DEC 6,83	0.12	0.25	0.010	<W 0.005	0.075	<W 0.002	0.016

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 10,83	0.001	0.001	0.007	0.027	0.003	< 0.002	0.023
MAR 1,83	FEB 1,83	0.003	0.003	0.025	0.081	D 0.008	< 0.002	0.060
MAR 29,83	MAR 1,83	0.002	< 0.001	0.012	0.060	0.006	< 0.002	0.047
APR 26,83	MAR 29,83	0.004	< 0.001	0.017	0.151	< 0.001	< 0.002	0.116
MAY 24,83	APR 26,83	0.012	0.002	0.004	U 0.269	0.003	< 0.002	U 0.482
JUN 21,83	MAY 24,83	0.006	0.003	0.005	0.116	0.003	< 0.002	D 0.105
JUL 19,83	JUN 21,83	0.002	< 0.001	< 0.002	0.017	0.001	< 0.002	0.019
AUG 22,83	JUL 19,83	0.009	< 0.001	0.003	0.126	0.006	< 0.002	0.103
SEP 19,83	AUG 22,83	U 0.029	0.002	0.005	U 0.321	0.003	< 0.002	U 0.372
OCT 11,83	SEP 19,83	0.001	< 0.001	< 0.003	0.034	< 0.001	< 0.002	0.049
NOV 8,83	OCT 11,83	0.002	< 0.001	L 0.007	L 0.019	0.003	< 0.002	L 0.020
DEC 6,83	NOV 8,83	0.002	< 0.001	< 0.003	0.016	< 0.001	< 0.002	0.018
JAN 3,84	DEC 6,83	0.002	0.001	0.004	0.019	< 0.001	< 0.002	0.030

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 10,83	0.003	0.0001	0.0355
MAR 1,83	FEB 1,83	0.005	0.0003	0.0339
MAR 29,83	MAR 1,83	0.002	0.0004	0.0437
APR 26,83	MAR 29,83	< 0.007	0.0003	*****
MAY 24,83	APR 26,83	0.007	0.0001	U 0.0003
JUN 21,83	MAY 24,83	0.002	0.0001	0.0063
JUL 19,83	JUN 21,83	0.001	< 0.0001	0.0076
AUG 22,83	JUL 19,83	0.005	< 0.0001	0.0002
SEP 19,83	AUG 22,83	0.004	< 0.0001	U 0.0000
OCT 11,83	SEP 19,83	< 0.002	< 0.0001	0.0022
NOV 8,83	OCT 11,83	L 0.001	0.0002	0.0054
DEC 6,83	NOV 8,83	< 0.002	< 0.0001	0.0056
JAN 3,84	DEC 6,83	< 0.003	< 0.0001	G 0.0028

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : QUETICO CENTRE/CUMULATIVE PRECIP. #32

PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
FEB 1,83	JAN 4,83	1000	1000	3	30.9	9	95230	2	1	73	C
MAR 1,83	FEB 1,83	1000	1000	3	29.2	9	95231	2	1	100	
MAR 29,83	MAR 1,83	1000	1000	3	31.3	9	95233	2	1	U 24	GH
APR 26,83	MAR 29,83	1000	800	3	31.1	0	95235	2	1	91	CD
MAY 2,83	APR 26,83	800	1530	1	10.0	0	95237	2	1	105	CD
MAY 24,83	MAY 2,83	1530	1000	3	15.0	0	95239	2	1	U 99	CDG
JUN 24,83	MAY 24,83	1000	1500	1	136.6	0	95243	2	1	86	ACD H
JUL 27,83	JUN 24,83	1500	1000	1	129.4	0	95244	2	1	78	D
AUG 16,83	JUL 27,83	1000	800	1	85.0	0	95245	2	1	87	CD H
SEP 13,83	AUG 16,83	800	800	1	99.0	0	95246	2	1	88	C
OCT 11,83	SEP 13,83	900	800	1	97.1	0	95051	2	1	77	BCD C
NOV 8,83	OCT 11,83	800	900	3	53.7	0	95247	2	1	U 2	CG
DEC 6,83	NOV 8,83	900	900	3	113.8	0	95248	2	1	U 62	CDG
JAN 3,84	DEC 8,83	900	900	2	17.9	0	95249	2	1	U 92	CF C

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,83	JAN 4,83	734.0	16.8	4.43	0.0694	1.05	0.40	0.05
MAR 1,83	FEB 1,83	956.0	15.8	4.68	0.0510	1.25	0.41	0.11
MAR 29,83	MAR 1,83	250.0	*****	4.57	0.0562	4.35	0.74	U 1.05
APR 26,83	MAR 29,83	919.0	17.5	4.54	0.0528	1.35	0.21	0.16
MAY 2,83	APR 26,83	341.0	11.5	G 6.59	0.0246	1.80	0.25	0.52
MAY 24,83	MAY 2,83	486.0	19.8	4.91	0.0380	3.10	0.35	0.50
JUN 24,83	MAY 24,83	3834.0	8.9	5.16	0.0252	1.20	0.16	0.21
JUL 27,83	JUN 24,83	3281.0	11.7	4.91	0.0324	1.30	0.19	0.14
AUG 16,83	JUL 27,83	2411.0	6.0	5.48	0.0230	0.75	0.13	0.16
SEP 13,83	AUG 16,83	2854.0	6.2	6.48	0.0120	0.65	0.15	0.24
OCT 11,83	SEP 13,83	2442.0	13.1	5.10	0.0298	1.70	0.26	0.31
NOV 8,83	OCT 11,83	45.0	*****	*****	*****	*****	*****	*****
DEC 6,83	NOV 8,83	2310.0	7.7	4.89	0.0276	0.55	0.12	0.07
JAN 3,84	DEC 8,83	537.0	6.3	4.79	0.0334	0.50	0.16	0.07

ONTARIO MINISTRY OF THE ENVIRONMENT
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APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : QUETICO CENTRE/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,83	JAN 4,83	0.13	0.30	<W 0.005	0.010	0.070	0.250	0.010
MAR 1,83	FEB 1,83	0.07	0.50	0.010	0.010	0.045	0.450	0.004
MAR 29,83	MAR 1,83	0.31	0.98	0.075	0.060	U 0.240	0.740	U 0.037
APR 26,83	MAR 29,83	0.06	0.18	0.025	0.030	0.055	0.100	0.006
MAY 2,83	APR 26,83	<T 0.01	1.04	0.055	0.060	0.050	0.780	0.018
MAY 24,83	MAY 2,83	0.07	0.77	0.105	0.060	0.040	U 0.656	0.021
JUN 24,83	MAY 24,83	0.03	0.34	0.020	0.100	0.065	0.302	0.007
JUL 27,83	JUN 24,83	0.06	0.31	0.020	0.040	0.020	0.306	<T 0.002
AUG 16,83	JUL 27,83	0.03	0.28	0.030	0.035	<W 0.005	0.250	0.007
SEP 13,83	AUG 16,83	0.02	0.28	0.035	0.030	0.030	0.226	0.007
OCT 11,83	SEP 13,83	<W 0.01	0.30	0.060	0.105	0.060	0.280	<T 0.001
NOV 8,83	OCT 11,83	*****	*****	*****	*****	*****	*****	*****
DEC 6,83	NOV 8,83	0.04	0.09	0.015	<W 0.005	0.030	<T 0.002	0.012
JAN 3,84	DEC 8,83	0.23	0.19	0.010	<T 0.005	0.190	<T 0.002	0.039

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,83	JAN 4,83	< 0.001	< 0.001	0.003	0.010	0.005	< 0.002	0.021
MAR 1,83	FEB 1,83	0.001	< 0.001	< 0.004	0.011	0.003	< 0.002	0.015
MAR 29,83	MAR 1,83	0.015	< 0.001	0.013	U 0.186	0.006	< 0.002	U 0.324
APR 26,83	MAR 29,83	0.001	< 0.001	< 0.004	0.025	0.002	< 0.002	0.021
MAY 2,83	APR 26,83	0.007	< 0.001	0.005	0.086	0.001	< 0.002	0.107
MAY 24,83	MAY 2,83	0.010	< 0.001	0.007	0.183	0.005	< 0.002	0.126
JUN 24,83	MAY 24,83	0.003	< 0.001	0.002	0.021	0.002	< 0.002	0.017
JUL 27,83	JUN 24,83	0.002	< 0.001	< 0.003	0.013	0.003	< 0.002	0.024
AUG 16,83	JUL 27,83	0.003	< 0.001	< 0.003	0.035	0.001	< 0.002	0.033
SEP 13,83	AUG 16,83	0.005	< 0.001	0.005	0.050	0.001	< 0.002	0.062
OCT 11,83	SEP 13,83	0.005	< 0.001	0.003	0.074	0.001	< 0.002	0.086
NOV 8,83	OCT 11,83	*****	*****	*****	*****	*****	*****	*****
DEC 6,83	NOV 8,83	< 0.001	0.002	0.003	0.008	< 0.001	< 0.002	0.017
JAN 3,84	DEC 8,83	0.002	0.001	< 0.006	0.051	0.001	< 0.002	0.039

ONTARIO MINISTRY OF THE ENVIRONMENT
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APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : QUETICO CENTRE/CUMULATIVE PRECIP. #32

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REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 1,83	JAN 4,83	0.002	< 0.0001	0.0372
MAR 1,83	FEB 1,83	0.002	< 0.0001	0.0209
MAR 29,83	MAR 1,83	0.005	< 0.0001	0.0269
APR 26,83	MAR 29,83	< 0.002	< 0.0001	0.0288
MAY 2,83	APR 26,83	< 0.004	< 0.0001	G 0.0003
MAY 24,83	MAY 2,83	0.003	0.0003	0.0123
JUN 24,83	MAY 24,83	0.001	< 0.0001	0.0069
JUL 27,83	JUN 24,83	< 0.001	< 0.0001	0.0123
AUG 16,83	JUL 27,83	0.001	< 0.0001	0.0033
SEP 13,83	AUG 16,83	0.001	< 0.0001	0.0003
OCT 11,83	SEP 13,83	0.001	< 0.0001	0.0079
NOV 8,83	OCT 11,83	*****	*****	*****
DEC 6,83	NOV 8,83	< 0.001	< 0.0001	0.0129
JAN 3,84	DEC 8,83	< 0.003	< 0.0001	0.0162

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WINISK/CUMULATIVE PRECIP.

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REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-OTHER	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-HOE 03-AES	SAMPLER EFFICI- ENCY (%)	COMMENTS FIELD OFFICE
JAN 31,83	DEC 29,82	1000	1000	2	26.6	9	11519	2	1	59	H
MAR 7,83	JAN 31,83	1000	1000	2	22.4	9	11559	2	1	69	
MAR 29,83	MAR 7,83	1000	1100	4	22.9	9	11574	2	1	10	N
MAY 10,83	MAR 29,83	1100	1100	1	*****	*	11611	2	1	***	
MAY 25,83	MAY 10,83	1100	930	4	*****	*	11624	2	1	***	H
JUN 21,83	MAY 25,83	1000	1000	1	*****	*	11644	2	1	***	FJ CM
JUL 19,83	JUN 21,83	1000	1100	1	*****	*	11686	2	1	***	A C
AUG 16,83	JUL 19,83	1100	800	1	*****	*	11695	2	1	***	AFIG HCM
SEP 20,83	AUG 16,83	800	1100	1	*****	*	11712	2	1	***	B HCM
OCT 25,83	SEP 20,83	1100	900	1	*****	*	11725	2	1	***	G
NOV 8,83	OCT 25,83	900	1100	3	*****	*	11740	2	1	***	
JAN 4,84	NOV 8,83	1100	1015	2	*****	*	11755	2	1	***	

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
JAN 31,83	DEC 29,82	513.0	17.6	4.59	0.0464	1.40	0.37	0.55
MAR 7,83	JAN 31,83	509.0	15.6	4.63	0.0476	1.60	0.23	0.31
MAR 29,83	MAR 7,83	75.0	*****	*****	*****	*****	*****	*****
MAY 10,83	MAR 29,83	786.0	10.8	6.13	0.0202	1.95	0.17	0.68
MAY 25,83	MAY 10,83	687.0	11.7	5.10	0.0306	1.55	0.14	0.26
JUN 21,83	MAY 25,83	5.0	G 61.5	U 7.74	0.0360	U 4.25	0.36	U 2.42
JUL 19,83	JUN 21,83	1707.0	10.6	U 6.88	0.0198	0.80	0.10	0.48
AUG 16,83	JUL 19,83	1354.0	8.9	U 7.04	0.0154	0.65	0.11	0.76
SEP 20,83	AUG 16,83	744.0	8.0	U 7.23	0.0156	0.55	0.13	0.65
OCT 25,83	SEP 20,83	691.0	21.6	U 7.37	0.0686	1.55	0.09	0.76
NOV 8,83	OCT 25,83	415.0	19.1	6.04	0.0168	1.30	0.09	*****
JAN 4,84	NOV 8,83	1272.0	G 56.8	U 6.83	0.0132	2.25	0.10	0.94

ONTARIO MINISTRY OF THE ENVIRONMENT
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APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WINISK/CUMULATIVE PRECIP.

#29

PAGE : 2

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
JAN 31,83	DEC 29,82	0.90	0.20	0.185	0.045	0.460	0.120	0.006
MAR 7,83	JAN 31,83	0.24	0.18	0.065	0.020	0.160	0.134	0.004
MAR 29,83	MAR 7,83	*****	*****	*****	*****	*****	*****	*****
MAY 10,83	MAR 29,83	0.52	0.35	0.110	0.035	0.275	0.250	< 0.001
MAY 25,83	MAY 10,83	0.10	0.45	0.055	0.040	0.080	0.320	0.012
JUN 21,83	MAY 25,83	0.38	*****	U 0.395	U 0.810	0.280	U 4.850	*****
JUL 19,83	JUN 21,83	0.34	0.67	0.070	0.150	0.210	0.540	0.071
AUG 16,83	JUL 19,83	0.73	0.18	<W 0.005	0.050	0.410	0.094	0.008
SEP 20,83	AUG 16,83	0.22	0.60	0.085	0.030	0.145	0.308	0.013
OCT 25,83	SEP 20,83	U 2.00	0.34	U 0.415	0.130	U 2.750	0.238	0.012
NOV 8,83	OCT 25,83	*****	0.11	*****	*****	*****	0.078	0.008
JAN 4,84	NOV 8,83	*****	< 0.02	U 1.300	0.345	U 8.650	0.014	< 0.003

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
JAN 31,83	DEC 29,82	0.002	< 0.001	0.022	0.048	0.006	< 0.002	0.018
MAR 7,83	JAN 31,83	0.001	< 0.001	0.008	0.024	0.005	< 0.002	< 0.015
MAR 29,83	MAR 7,83	*****	*****	*****	*****	*****	*****	*****
MAY 10,83	MAR 29,83	0.002	0.002	0.007	0.035	< 0.001	< 0.002	0.029
MAY 25,83	MAY 10,83	0.002	0.002	0.005	0.036	< 0.001	< 0.002	0.039
JUN 21,83	MAY 25,83	0.007	0.001	L 0.014	U 0.148	0.004	< 0.002	L 0.029
JUL 19,83	JUN 21,83	0.001	< 0.001	0.008	0.027	0.002	< 0.002	0.023
AUG 16,83	JUL 19,83	0.004	< 0.001	0.007	0.068	0.003	< 0.002	0.042
SEP 20,83	AUG 16,83	0.002	0.001	G 0.027	0.078	0.015	< 0.002	0.024
OCT 25,83	SEP 20,83	0.001	< 0.001	0.007	0.046	< 0.001	< 0.002	0.031
NOV 8,83	OCT 25,83	< 0.001	< 0.001	0.005	0.020	0.003	< 0.002	0.021
JAN 4,84	NOV 8,83	< 0.001	< 0.001	0.003	0.018	< 0.001	< 0.002	0.017

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WINISK/CUMULATIVE PRECIP.

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PAGE : 3

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
JAN 31,83	DEC 29,82	0.002	0.0003	0.0257
MAR 7,83	JAN 31,83	< 0.003	0.0001	0.0234
MAR 29,83	MAR 7,83	*****	*****	*****
MAY 10,83	MAR 29,83	< 0.002	0.0001	0.0007
MAY 25,83	MAY 10,83	< 0.002	0.0002	0.0079
JUN 21,83	MAY 25,83	L 0.001	< 0.0001	U 0.0000
JUL 19,83	JUN 21,83	< 0.002	< 0.0001	U 0.0001
AUG 16,83	JUL 19,83	0.001	0.0002	U 0.0001
SEP 20,83	AUG 16,83	0.005	0.0003	U 0.0001
OCT 25,83	SEP 20,83	0.002	< 0.0001	U 0.0000
NOV 8,83	OCT 25,83	< 0.003	< 0.0001	0.0009
JAN 4,84	NOV 8,83	< 0.002	0.0001	U 0.0001

TD	Cumulative (28 day)
195.54	precipitation chemistry listings :
.06	January 4, 1983 - January 3,
C862	1984.
1985	77577